Journal
OF THE AMERICAN VETERINARY MEDICAL ASSOCIATION

# Convention Preview

*95th Annual Meeting, Philadelphia, August 18-21, 1958*

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**Vol. 133** **July 1, 1958** **No. 1**

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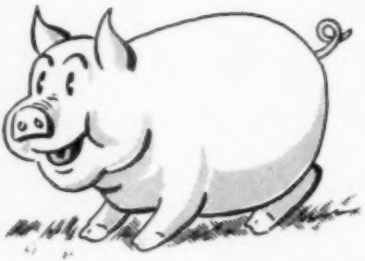

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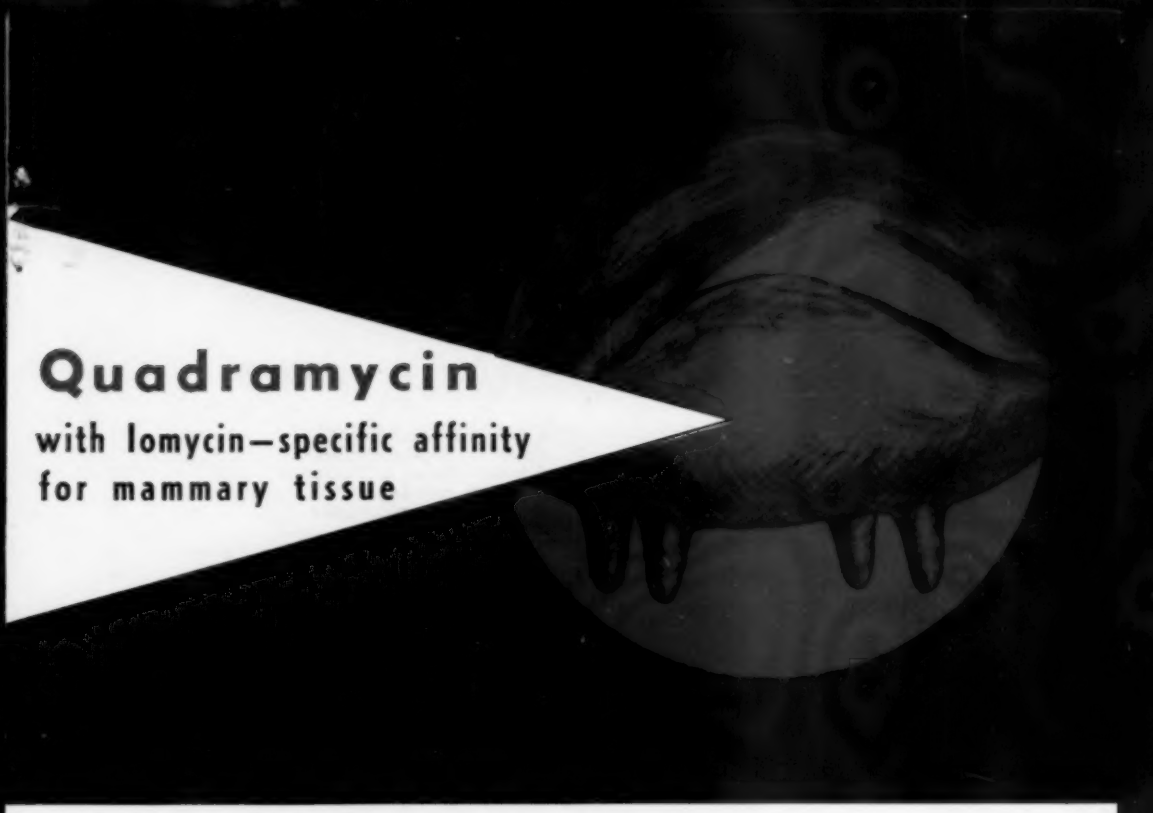

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# Correspondence

April 14, 1958

Dear Dr. Aitken:

I was interested in your editorial comment on page 280 of the April 1 issue of the JOURNAL; also the reference to the article in *Nutrition Reviews* (Feb., 1958: p. 52). As you perhaps remember, it was often stated in the literature that too much iodine could cause lack of potency and infertility. You may especially remember 1 bull I treated at the Iowa State College Clinic for actinobacillosis. I gave him 8 oz. of potassium iodide over a period of seven days and he showed all the signs of iodism. During that period, Dr. Murray's cow was in season and we bred her once to him and she conceived. That made me wonder about the warning in the literature.

After I came here to the Ohio State University, I had an experience which I described on page 69 of the 1953 edition of "Surgical Principles and Techniques" under *IX Keratitis:*

> In 1934 a calf was shipped to the clinic with the following history: All calves born at this farm, during the previous few weeks, appeared perfectly normal. However, the hair coat was exceptionally heavy, . . . and within a few hours the hair was wet from perspiration and the cornea of the eyes became cloudy (fig. 58). Within a few days the cloudiness caused blindness. The superficial layer of the skin epidermis was loosened and presented a cracked or broken appearance as it became elevated by the hair.
>
> We had somewhat similar symptoms in a newborn calf, whose dam was suffering from iodism due to treatment for actinobacillosis. We concluded that this herd probably was receiving an excess of some form of iodine in the daily ration. The calves on the farm nursing their dams were showing no improvement. The one referred to us made a complete recovery without any treatment. Apparently the symptoms were precipitated due to an intrauterine acquired sensitization to light or air.

I know that the owner of the above dairy herd had been advised that the generous use of potassium iodide would prevent "abortion disease." I never could get them to admit that they were using it; however, I did have evidence that there was considerable kelp in the ration. These cattle did not abort but the calves certainly showed the effect of excessive iodine as stated in my description in the book.

As you know, I used potassium iodide once a day, in treating mature cattle, until signs of iodism appeared.

There was another article on page 284 of the April 1, 1958, issue of the JOURNAL which interested me because it reports a method of treating fractures of large animals. The author apparently reviewed a great deal of literature relative to fractures in large animals back as far as 1891 without any indication that he had ever read Chapter VIII, pages 202 to 229, of "Surgical Principles and Technics," 1953 edition.

Sincerely yours,
s/ W. F. GUARD,
Columbus, Ohio.

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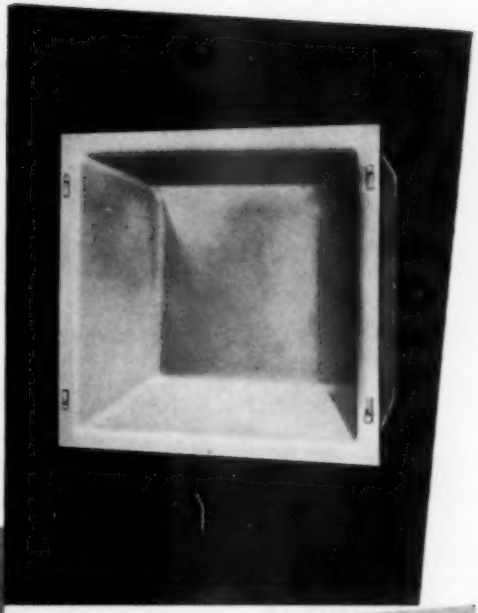

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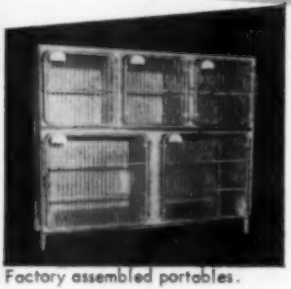

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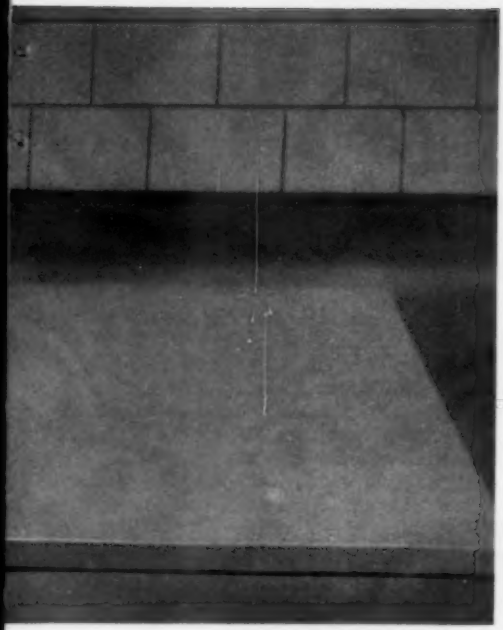

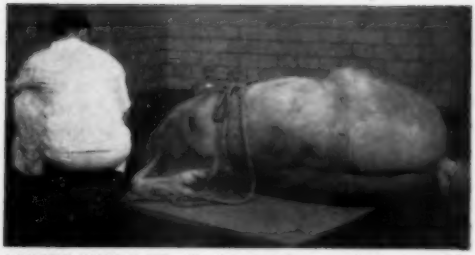

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AVMA Report

## The Philadelphia Meeting

### *A Message from President Armistead*

Few cities in the United States have as much to offer the visitor as has Philadelphia, cradle of American liberty, birthplace of both the Declaration of Independence and the Constitution. Central feature of this historic city is Independence Hall, completed in 1759 and originally intended as a State House. However the Hall was given over for use by the Continental Congress in 1775, and in 1776 the Declaration of Independence was signed there. In 1787, the Constitutional Convention drew up the Constitution of the United States. But in spite of these two momentous events, the old building was not recognized as a national museum until 1876. Other buildings surrounding Independence Hall were built in 1787-1790 and the group, called Independence Square, was designated a national park in 1948.

President W. W. Armistead

But not all of Philadelphia's attractions are centered in Independence Square. Franklin Institute, founded in 1824, is one of the country's foremost institutions for promotion of applied science. Other points of interest include the Philadelphia Museum of Art, the Academy of Natural Sciences, the United States Mint, the University of Pennsylvania with its School of Veterinary Medicine and, just 22 miles north of Philadelphia, famous Valley Forge State Park.

In these historic and cultural surroundings, the American Veterinary Medical Association will hold its Ninety-Fifth Annual Meeting on Aug. 18-21, 1958. An excellent and particularly diversified program has been planned. This year's technical program is one you can not afford to miss. No effort has been spared to bring together the finest possible slate of speakers to present the latest technical information of interest to all segments of the profession.

This year, again, a pre-convention conference on public relations will be held on Sunday, August 17. These conferences have been enthusiastically received and attendance has grown each year. The AVMA staff and officers hope that you will plan to come early enough to attend also the sessions of the House of Delegates which begin at 1:30 p.m. on Friday, August 15, and run through the next day. This year many important matters will come before the House, including the vote on the new Constitution and ByLaws. You owe it to your profession and to yourself to see firsthand how the legislative branch of your association functions.

The local arrangements this year will be unusually attractive. Educational and recreational activities have been planned for every member of the family. The tour schedules also are especially attractive. In addition to numerous tours in and around historic Philadelphia, Happiness Tours will offer various combinations of trips to New York with extensions to New England and Bermuda.

All this adds up to what may well be the finest convention in our history. So plan now to attend—and bring the entire family. Regardless of age or interests, you will find that a full, profitable, and enjoyable program has been planned for YOU!

Only one of these men looks like a doctor—but in the confusing situation that exists today in the treatment of livestock disease, there are lots of laymen (just like the farmer in the sketch) who are in effect trying to do the job of a veterinarian but without the professional skill and knowledge that is essential. Couldn't such a trend be harmful to the graduate veterinarian, to the ethical supply house and ultimately to the whole livestock industry?

It is easy for us to point the finger since we sell only to graduate veterinarians. However, we think you have a stake in the matter—much the same as we do. Perhaps you can take up where we leave off. Next time you get ready to place an order, think seriously about these questions:

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# First phosphate insecticide approved for direct application on cattle, hogs and poultry

## Effectiveness plus low toxicity to animals supports malathion's new acceptance for control of external parasites

A significant advance was made in the control of insect pests on livestock with new, government residue tolerances for malathion insecticides. These tolerances cover meat and meat by-products from non-lactating cattle, hogs and poultry. Extensive research has proved the effectiveness—and safety to warm-blooded animals—of using this *phosphate* for direct application. The U.S. Public Health Service says in its *Clinical Memoranda on Economic Poisons*, ". . . the toxicities of malathion (oral and through the skin) are less than those of DDT."

Together with its long-established use for fly control in stock buildings, direct application of malathion now lets you recommend one insecticide for control of major poultry and livestock pests.

### Resistant Insects Controlled

There are indications that insect resistance to the DDT family of insecticides is becoming a problem to livestock producers as it now is to crop farmers. At present, insects showing resistance include lice, flies and mosquitoes. Because malathion is a phosphate it has proved highly effective against these pests.

### Residues

Malathion's thorough control and rapidly disappearing residues eliminate close-to-slaughter residue problems. Used according to directions, malathion can be applied directly to animals right up to slaughter. Malathion's tolerances are: 4 parts per million in or on meat and meat by-products; 0 parts per million in eggs.

### Use Recommendations

*Beef Cattle*—Malathion sprays can be applied on cattle for control of lice, ticks and horn flies. In back-rubbing devices, malathion is effective against lice and horn flies. Malathion should *not* be used on lactating dairy animals or on calves under one month of age.

Here cattle are being sprayed for lice. Ticks and horn flies, when present, are also controlled.

*Hogs*—Use malathion on animals, pens and in litter for control of lice. One application usually does the job.

*Poultry*—Apply malathion sprays or dusts directly to birds to control Northern fowl mite and poultry lice. In poultry houses, spray malathion thoroughly on all surfaces to clean up Northern fowl mite, chicken red mite, poultry lice, ticks and flies. For mites and lice, dusts may also be used. Or apply malathion as a roost paint to control chicken red mite and poultry lice.

For rate information write for free leaflet.

### Insect Control on Household Pets

Malathion sprays or dusts control fleas on dogs and cats. If animal is confined to a pest-free area, one treatment is usually sufficient. Malathion also controls ear mites on dogs.

▼ ▼ ▼

Malathion is *not* a brand name. It is the active ingredient in branded formulations offered by over 100 well-known manufacturers. American Cyanamid Company manufactures the basic ingredient. For a detailed leaflet describing direct application on livestock, or a supply to leave with your clients, write: American Cyanamid Company, Insecticide Dept. J1, N. Y. 20, N. Y.

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VITAMIN-MINERAL TABLET FOR DOGS

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# New Caminal S

with the canine high palatability factor

*dogs love it! beg for it!*

TABLETS ACCEPTED FREE CHOICE

- simple to administer
- excellent conditioning agent for skin and coat
- eliminates problems of finicky eaters
- vitamin-mineral deficiency readily corrected with Caminal S
- sick and normal dogs eat their food with relish

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VETERINARY LABORATORIES
A Division of Armour and Company
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SUPPLY: Bottles of 50 Tablets.

## Provide profit insurance . . .

### Cuts weight losses in transport of feeder cattle

Tranquilization reduces response to various excitatory stimuli incidental to handling, loading and transportation of livestock. TRILAFON minimizes factors contributing to weight loss. **Savings may be estimated in terms of pounds—and dollars—per head.**

### Relieves shipping fatigue and lowered resistance to infection

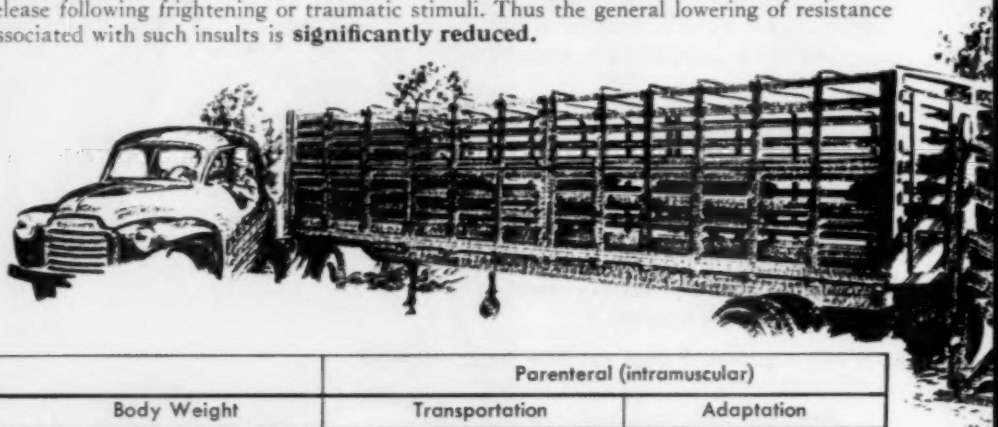
**TRILAFON significantly reduces weight loss and incidence of respiratory disease** (shipping fever) and diarrhea in animals subjected to traumatic shock during handling and shipment. Animals subjected to fright and deprivation of food and water normally suffer lowered resistance to infection.

### Eases adaptation to new environments and management practices

TRILAFON facilitates transition from range or pasture to feedlot environment. Bawling, milling and fence walking are reduced; animals become more tractable and **go on full feed faster.** Stress induced by weaning, dehorning, castration, vaccination and other handling procedures is markedly lessened.

### Reduces incidence and severity of infectious diseases aggravated by toxemia and environmental stress (when used as supportive therapy with appropriate chemotherapeutic agents)

TRILAFON shields animals against lowered resistance occurring in shock induced by various stress situations. As a potent adrenergic blocking agent it apparently antagonizes epinephrine release following frightening or traumatic stimuli. Thus the general lowering of resistance associated with such insults is **significantly reduced.**



| | Parenteral (intramuscular) | |
|---|---|---|
| Body Weight | Transportation | Adaptation |
| 300-600 lbs. | 25-50 mg. | 15-25 mg. |
| 600-900 lbs. | 50-75 mg. | 50-75 mg. |
| 900 lbs. and over | 75-100 mg. | 75-100 mg. |

In transportation and adaptation situations low dosages will produce the desired response without reduction of psychomotor activity. In these indications a clinically apparent degree of tranquilization is not required. Thus, **prescribed doses must be carefully observed.**

**Packaging** TRILAFON® Injection, 25 mg./cc., 30 cc. vial, boxes of 1 and 6.

SCHERING CORPORATION • BLOOMFIELD, NEW JERSEY V-TR-1-208

# SHIELD LIVESTOCK AGAINST WEIGHT LOSSES DUE TO TRANSPORT, HANDLING AND ENVIRONMENTAL CHANGES

**Trilafon**

Perphenazine

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# For Superior Effectiveness

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## By ARNOLD

## Sold only to Graduate Veterinarians

| PRODUCT | DESCRIPTION | INDICATIONS |
|---|---|---|
| **DIENESTROGEN** | 5 mg. Dienestrol/cc. in special oil base. 10 cc. vials. | To promote conception in "shy-breeding" cows. |
| **ESTRADIOGEN** | 3 mg. Estradiol Dipropionate/cc. in special oil base. 10 cc. vials. | For anestrus, mummified fetus, pyometra, urinary incontinence, enlarged prostate. |
| **POSTERIOR PITUITARY** Double U.S.P. | 20 U.S.P. units/cc. Posterior Pituitary. 10 cc. vials. | To stimulate contraction of smooth muscles of uterus, urinary bladder, blood vessels, intestines or milk acini. |
| **PROGESTERONE** | 10 mg. Progesterone/cc. in special oil base. 10 cc. vials.<br>50 mg. Progesterone/cc. in oil with 10% benzyl alcohol. 10 cc. vials. | To prevent habitual and threatened abortion, treat cystic ovaries and nymphomania, delay estrum, stimulate endometrial development and secretions, favor nidation of ovum. |
| **STILBESTROGEN** | Diethylstilbestrol fortified with Estradiol Dipropionate in special oil base.<br>No. 4—4 mg. Stilbestrol w/ 1600 units Estradiol per cc., 60 cc. vials.<br>No. 10—10 mg. Stilbestrol w/ 4000 units Estradiol per cc., 30 cc. and 60 cc. vials.<br>No. 25—25 mg. Stilbestrol w/ 10,000 units Estradiol per cc., 10 cc. and 30 cc. vials. | For anestrus, retained placenta, mummified fetus, pyometra, inhibition of lactation, urinary incontinence, vaginitis in spayed bitches. |
| **TESTANDROGEN** | Testosterone Propionate/cc.: 25 mg. in oil, 10 cc. vials. 50 mg. in oil, with 2% benzyl alcohol. 10 cc. vials. 100 mg. in oil with 10% benzyl alcohol. 10 cc. vials. | For cryptorchidism, hypogenitalism, hypogonadism, impotency, senility, eczema; stimulation of bone formation; fracture repair, osteoporosis; inhibition of lactation, mammary carcinoma. |

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NEW CASTLE, INDIANA, U. S. A.

**Use as a therapeutic shampoo** in eczemas, seborrheic dermatitis, scaly skin, otitis externa, nonspecific dermatitis, demodectic mange, fungus infections.

***Available*** *in 4.5 oz. and 3 lb. jars.*

**Clinical results in 592 dogs**

| Condition | Total Number | Good to Excellent Results |
|---|---|---|
| Weeping dermatitis ("Moist Eczema") | 217 | 200-(92%) |
| Dry dermatitis ("Summer Eczema") | 238 | 190-(80%) |
| Seborrheic dermatitis (including otitis externa) | 137 | 127-(93%) |

The effectiveness of FOSTEEN is provided by Sebulytic® (dioctyl sulfosuccinate, alkyl aryl polyether sulfonate and lauryl sulfoacetate) a new combination of surface active cleansing, penetrating and wetting agents with remarkable *antiseborrheic*, *keratolytic*, *antibacterial* and *antifungal* action—enhanced by sulfur 2%, salicylic acid 2% and hexachlorophene 1%.

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Unexcelled for long-term therapy—no contraindications, no reports of toxic effects.

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Formation of alkaline calculi discouraged in acid urine.

*To treat all urinary problems of small animals, specify* **URISED,** *veterinary*

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# New! BACTERICIDAL-FUNGICIDAL TRIOCIL SPRAY!

**CLINICAL USE SHOWS RAPID HEALING OF:**

- dermatoses
  ringworm, fungus infections, eczema, hot spots, acute erythematous and moist dermatitis
- otitis externa
- minor cuts and wounds
- paronychia
- pyogenic infections

***No resistant organisms have been reported.***

**USE TRIOCIL SPRAY TWO WAYS! FOR DROPS . . . FOR SPRAY!**

**Turn outlet down to dispense drops.**

**Hold bottle upright and squeeze to spray.**

Now your Triocil treatment for dogs, cats and large animals can be faster and easier than ever! Triocil Spray is now available . . . with a penetrating alcohol-acetone base . . . conveniently packaged in a 50 ml. squeeze bottle. Also in ointment and solution (shampoo-like detergent base).

Triocil Spray is effective against practically all organisms that cause or complicate skin infections. And you will find Triocil Spray invaluable for pre-surgical preparation. Because Triocil has high tissue affinity, it resists licking and rubbing off—leaves a faint, identifying pink color on the skin. Pleasantly scented!

## Triocil® Spray

Brand of hexetidine Trademark

*Sold only through veterinary distributors*

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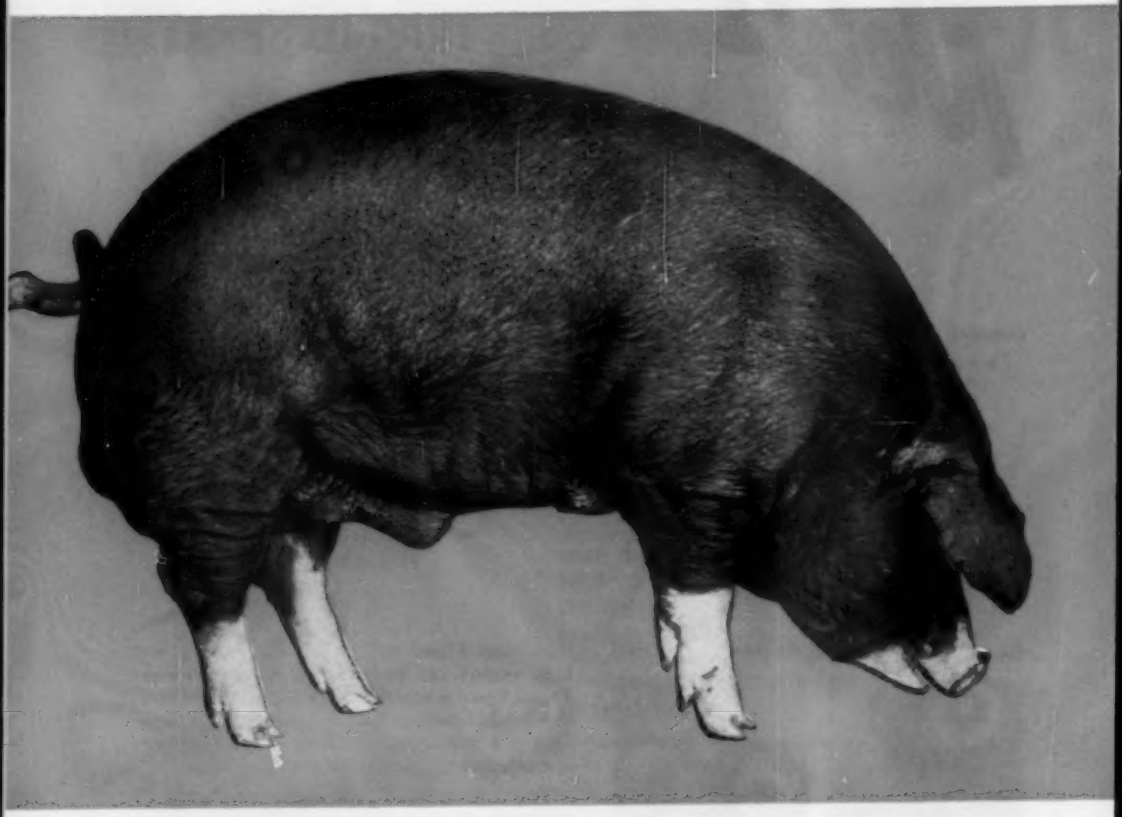
THE POLAND CHINA HOG was originally known as the "Warren County Hog" due to the important role Warren County, Ohio, played in its development. A world's record is held by a litter of 19 pure-bred Poland Chinas, which weighed 5,117 lb. at six months of age.



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# JOURNAL

## of the American Veterinary Medical Association

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## Message from the Co-General Chairmen, Committee on Local Arrangements

On behalf of the 900 veterinarians and their families in the Keystone State of Pennsylvania, we are delighted to extend to you and to your families a most cordial invitation to attend the Ninety-Fifth Annual AVMA Meeting.

Philadelphia, your host city, famous for nearly three centuries of gracious hospitality, is ready and waiting to share with you the historic atmosphere prevailing in the City of Brotherly Love. A visit to such shrines of American history as Independence Hall and the Betsy Ross House will be an unforgettable experience for your children, so by all means plan to bring the entire family.

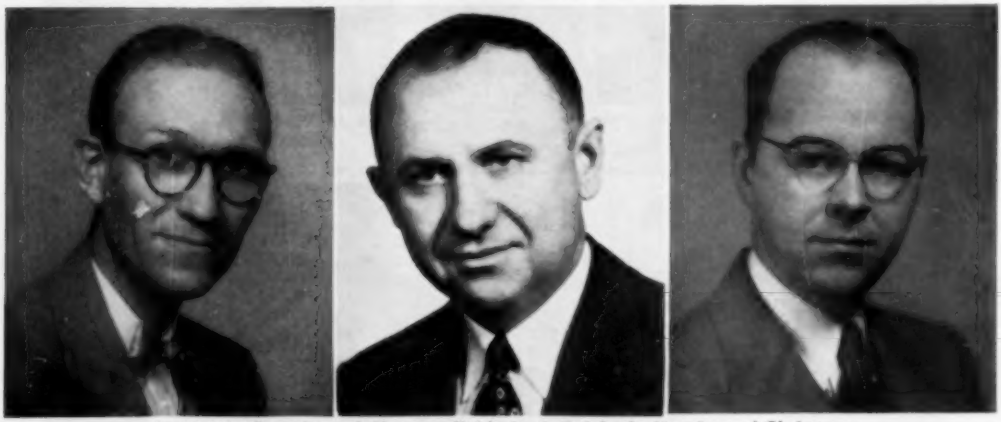
Excellent hotel accommodations are available; our municipal auditorium is among the finest in the world, and transportation throughout the city is excellent. Not only is Philadelphia rich in historical interest but the city offers, as well, unequaled facilities for shopping, dining, and entertainment.

The meeting this year is to be held close to the University of Pennsylvania, one of the oldest and most famous institutions of higher learning in the country. That the scientific portion of the program will be delivered in a proper medical atmosphere is attested by the fact that the University is in itself a great medical center, including the School of Veterinary Medicine.

The Committee on Local Arrangements has planned unusual and exciting programs for every member of the family and for all age groups. We are proud to extend our hospitality and to welcome you to Pennsylvania.

s/M. W. Allam and S. F. Scheidy,
*Chairmen, Committee on Local Arrangements.*

### General Officers of the Local Committee



Dr. M. W. Allam, General Chairman (left); Dr. S. F. Scheidy, Vice-General Chairman; Dr. R. C. Snyder, General Secretary.

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Meeting Rooms and Equipment

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Golf Tournament

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Subteenagers

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Alumni Luncheons

Dr. Alan Bachrach

Entertainment

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# Ninety-Fifth Annual Meeting

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Mrs. Alan Bachrach, *Secretary*

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Mrs. E. W. Cook
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Mrs. R. C. Guise
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Mrs. E. E. Way

**Convention Hall, Where All the Sessions of the Ninety-Fifth Annual Meeting Will Be Held**

The Aronimink Country Club where the Golf Tournament will be held.

## AVMA Golf Tournament in Philadelphia

The AVMA Golf Tournament will be held on Monday, August 18, at the Aronimink Country Club, located in beautiful Delaware Valley about 15 miles west of Philadelphia. Buses will leave the hotels at 12:30 p.m. for the golf course.

There will be a $13 charge for the tournament, which will include transportation, green fees, dinner, and gratuities while in the club house. Caddy fees will be taken care of by individual golfers.

For those who can not stay for dinner, the fee will be $7; they will have to arrange for their return transportation.

For the women who wish to play cards instead of golf, there will be a charge of $5—this will include dinner and all gratuities.

Par for the course (6,773 yards) is 70 from the back tees and 76 from the women's tees (6,049 yards). From the standpoint of distance alone, it will be a real test for golfers—it is a championship course in every sense of the word.

An ample number of caddies have been promised. Caddy carts are not permitted on the course, but there is no restriction regarding a player carrying his own bag.

*Dress.*—On the golf course shirts must be worn. If shorts are worn, they must be of knee length. Coats or jackets are required at dinner but sports shirts are permitted.

*Scoring—AVMA Trophy.*—For the two-man state, provincial, or territorial teams, the best ball of partners will prevail. All players will be eligible for the prizes listed below:

Substantial prizes for first and second low gross and first and second low net; first low gross and first low net for the women.

Other prizes will be awarded for the lowest number of putts, the longest drive, closest to the pin on the fifth hole, and others. Only one prize will be awarded to a contestant.

Reservations for the state teams should be sent early as possible, and tickets for the golf tournament should be obtained as soon as you get to the to Dr. Otto Stader, P.O. Box 229, Ardmore, Pa., as convention.

### A View of the Aronimink Course Near Philadelphia

## Message from the Co-Chairmen of the Committee on Women's Activities

At long last, after 31 years, Philadelphia, with the State of Pennsylvania, again has the opportunity to welcome you and to plan for you a program which we hope will be one of the best ever. Of course we hope also that registration figures will soar to an all-time high. During your stay here, there will be time for you to visit all the historical places you have read about for so long, and also opportunities to visit our cultural centers as well.

For the subteens there has been planned a program that we feel will be enthusiastically received. The committee for this group has made arrangements to include a trip to the Philadelphia Navy Yard plus a show at the Fels Planetarium, among other things.

The teenagers will be happy to learn that a visit to the now famous "Dick Clark Bandstand Show" is on the agenda, plus a swimming party at the University of Pennsylvania pool. We mention these few activities to let you know that a good time is in order for all.

We feel we should let you know what to expect money-wise, especially for the children. Since costs for everything this year are at an all-time high, it has been necessary for us to assess 50 cents (approximately) for each of the two box lunches the children will receive on the very complete and interesting tours they will be given. This will apply also to the teenage box lunches on the Wednesday tour. There is a reduced admission fee of 30 cents to the Fels Planetarium, but since many of you never have the opportunity to visit such a show we felt you would want us to include this for your children.

Congress Hall, adjoining Independence Hall, was the national capitol from 1790 to 1800. Washington was inaugurated here for his second term as President of the United States.

Carpenter's Hall was the meeting place of the First Continental Congress in 1774. In 1875, Carpenter's Company dedicated it as a historic shrine.

Our new Sheraton Hotel will be the place for the Auxiliary tea on Monday, August 18, and also for the luncheon on Wednesday, August 20. The women's historical tour will be given to us at the rate of $1.57 per person. We have made arrangements with the Grey Line, and they have been kind enough to give us this figure, which is a great reduction from the regular price.

If we have our usual summer weather, August may be quite warm, and so we suggest you bring along cool, light-weight clothing. A wrap for evenings will be advisable in case the evenings are cool.

We happen to have several summer theaters close by, both drama and musicals "in the round," that you may care to attend one evening.

Now that we have told you about a few of our social plans, we want to urge all the women to attend the Opening Session of this Ninety-Fifth AVMA Convention. From then on, we trust you will be busy having a good time!

s/Mrs. Samuel Scheidy and
Mrs. Raymond Snyder, *Co-Chairmen,*
*Committee on Women's Activities*

## Women's Social Program

**Sunday, August 17**

10:00 a.m. Registration Opens—*Convention Hall.*

**Monday, August 18**

8:30 a.m. Registration—*Convention Hall.*
8:30 a.m. Visit Commercial and Scientific Exhibits—*Convention Hall.*
9:30 a.m. Opening Session—*Convention Hall.*
3:00 p.m. to 5:00 p.m. Tea and Reception—*Sheraton Hotel.*

**Tuesday, August 19**

12:30 p.m. and 3:00 p.m. Historical Tour of Philadelphia.

**Wednesday, August 20**

12:30 p.m. Luncheon and Style Show—*Sheraton Hotel.*
8:00 p.m. Installation of Officers of Women's Auxiliary and of the AVMA; Entertainment; President's Reception; Dance.

The following tours are offered on Monday, Tuesday, Wednesday, and Thursday by the Grey Line Sight-Seeing Co.:

1) Educational Philadelphia and Fairmount Park.
2) George Washington's Winter Encampment, 1777-1778, and his headquarters at Valley Forge.
3) Longwood Gardens.

Other places of interest—Bulletin Building, Franklin Institute, Fels Planetarium, and Philadelphia Art Museum.

• • •

## Teenagers' Program

**Monday, August 18**

1:30 p.m. Splash Party, University of Pennsylvania indoor pool.

**Tuesday, August 19**

1:30 p.m. Dick Clark's American Band Stand, TV Station WFIL.
(Ages 14 to 17 only. Register early, only 100 tickets are available. Boys must wear ties and coats.)
1:45 p.m. Alternating Walking Tour—Franklin Institute; and Fels Planetarium Show at 3:00 p.m. (Admission, 30 cents)

**Wednesday, August 20**

9:30 a.m. Historic Tour of Philadelphia and Tour of the Navy Yard.
(Box lunch approximately 50 cents)

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## Subteenagers' Program
### (Ages 7—12 years)

**Monday, August 18**

2:00 p.m. Get-Acquainted Party—Hall of Flags, Sheraton Hotel. Showing of TWA Colored Movie on "Far Away Lands." Refreshments.

**Tuesday, August 19**

9:30 a.m. Historic Tour of Philadelphia and Tour of Navy Yard.
(Box luncheon approximately 50 cents)

**Wednesday, August 20**

10:30 a.m. Tour of Bulletin Building, Franklin Institute, and Fels Planetarium Show at 3:00 p.m. (Admission, 30 cents)
(Box lunch approximately 50 cents)

All tours leave from Sheraton Hotel and Bellevue Stratford Hotel.

## Message from the President of the Women's Auxiliary

Mrs. Lewis H. Moe

A cordial invitation is extended to all wives of veterinarians to come to Philadelphia, the historical city, to attend the AVMA Convention, Aug. 18-21, 1958.

The Women's Auxiliary to the AVMA will hold its Forty-First Annual Meeting in conjunction with the Ninety-Fifth Annual Meeting of the AVMA.

Mrs. S. F. Scheidy and Mrs. R. C. Snyder, and their women's activities committee, are planning interesting and unusual entertainment for us.

The Opening Session of the AVMA Convention, on Monday morning, August 18, sets the tempo for the entire convention, which the women will enjoy attending.

The Auxiliary house of representatives meeting will be on Tuesday morning, followed by the annual business meeting. The auxiliary workers conference is of general interest to our members. I urge all of you to attend these meetings. On Wednesday evening the joint installation of AVMA and Women's Auxiliary officers is one of the highlights of the convention.

Take this opportunity for your vacation, broaden your friendships, and hear of the accomplishments, problems, and prospects for the future of our auxiliary.

s/(Mrs. Lewis H.) Marguerite Moe, *President.*

• • •

## Women's Auxiliary Business Sessions

*Hotel Sheraton*

**Saturday, August 16**

8:30 a.m. Budget Committee—*Connie Mack Room.*
1:00 p.m. Executive Board, first session—*Connie Mack Room.*

**Sunday, August 17**

9:00 a.m. Executive Board, second session—*Connie Mack Room.*

**Tuesday, August 19**

8:00 a.m. House of Representatives Buffet Breakfast—*Pennsylvania Ballroom, West.*
9:00 a.m. House of Representatives to be followed by Annual Meeting (all interested women are invited)—*Pennsylvania Ballroom, West.*

**Wednesday, August 20**

9:00 a.m. Auxiliary Workers' Conference—*Constitution and Independence Rooms.*

**Thursday, August 21**

8:30 a.m. Executive Board, third session—*Connie Mack Room.*

## Women's Auxiliary Officers

President—Mrs. L. H. Moe, Stillwater, Okla.
President-Elect—Mrs. E. A. Woelffer, Oconomowoc, Wis.
Recorder—Mrs. F. R. Booth, Elkhart, Ind.
First Vice-President—Mrs. E. E. Leasure, Manhattan, Kan.
Second Vice-President—Mrs. J. I. Cornwell, Asheville, N. Car.
Third Vice-President—Mrs. T. S. Maddox, Greenville, Ky.
Secretary—Mrs. A. W. Eivers, Salem, Ore.
Membership Secretary—Mrs. C. M. Rodgers, Blandinsville, Ill.
Treasurer—Mrs. J. D. Stevens, Sequim, Wash.
Retiring President—Mrs. A. E. Coombs, Skowhegan, Maine.

## Group Conferences and Meetings

**(Meetings in Sheraton Hotel unless otherwise indicated)**

### Saturday, August 16

All Day—American Association of Veterinary Bacteriologists—*School of Veterinary Medicine, University of Pennsylvania.*

### Sunday, August 17

All Day—Student Chapter Delegates Open House—*University of Pennsylvania.*

10:00 a.m. American College of Veterinary Toxicologists—*Delaware Valley Suite C.*

10:00 a.m. Preconvention Conference on Veterinary Associations and Public Relations—*Pennsylvania Ballroom, West.*

1:30 p.m. Association of Deans of American Colleges of Veterinary Medicine—*Delaware Valley Suite A.*

6:00 p.m. American Veterinary Exhibitors Association—*Pennsylvania Ballroom, East.*

6:00 p.m. American Board of Laboratory Animal Medicine—*Connie Mack Room.*

6:30 p.m. Delegates—Student Chapters and Auxiliaries—*Constitution and Independence Rooms.*

7:00 p.m. Teachers of Veterinary Clinical Pathology—*Delaware Valley Suite C.*

7:30 p.m. American Board of Laboratory Animal Medicine, Open Meeting—*Connie Mack Room.*

8:00 p.m. Conference of Public Health Veterinarians—*Delaware Valley Suite A and B.*

### Monday, August 18

3:00 p.m. Women's Veterinary Medical Association—*Delaware Valley Suite A.*

3:00 p.m. National Board of Veterinary Medical Examiners—*Delaware Valley Suite B.*

4:00 p.m. National Society of Phi Zeta—*Delaware Valley Suite C.*

5:00 p.m. American College of Veterinary Pathologists—*Connie Mack Room.*

5:15 p.m. American Society of Academic Veterinary Clinicians—*Delaware Valley Suite D.*

7:00 p.m. Industrial Veterinarians' Association—*Connie Mack Room.*

7:00 p.m. American Association of Veterinary Nutritionists—*Constitution Room.*

7:30 p.m. National Association of Federal Veterinarians—*Pennsylvania Ballroom, East.*

7:30 p.m. American Board of Veterinary Public Health—*Independence Room.*

7:30 p.m. Editors' Conference—*Rooms 556 and 558.*

7:30 p.m. National Assembly of Chief Livestock Sanitary Officials—*Delaware Valley Suite A.*

7:30 p.m. Zoo Veterinarians—*Delaware Valley Suite B.*

8:00 p.m. American Association of Veterinary Parasitologists—*Delaware Valley Suite C.*

### Tuesday, August 19

8:00 a.m. Virginia Veterinary Medical Association—*Penn Sherwood Hotel.*

11:45 a.m. American Animal Hospital Association—*Room 304, Convention Hall.*

*(Continued on Page 10)*

12:00 noon Alpha Psi Fraternity—*Pennsylvania Ballroom, East.*
12:00 noon American Association of Veterinary Anatomists—*Connie Mack Room.*
1:00 p.m. Symposium on Regulatory Veterinary Medicine—*Main Lobby, second floor, Convention Hall.*
7:00 p.m. American Association of Avian Pathologists—*Connie Mack Room.*
7:30 p.m. National Association of Extension Veterinarians—*Delaware Valley Suite A.*
7:30 p.m. American Society of Veterinary Ophthalmology—*Delaware Valley Suite B.*
8:30 p.m. American Association of Equine Practitioners—*Independence Room.*

## Wednesday, August 20

8:30 a.m. Symposium on Regulatory Veterinary Medicine—*Main Lobby, second floor, Convention Hall.*
2:00 p.m. American Veterinary Radiology Society—*Constitution Room.*
3:00 p.m. American Boards of Veterinary Medical Examiners—*Independence Room.*

## Thursday, August 21

7:30 a.m. Section Officers' Breakfast—*Convention Hall.*
1:30 p.m. American Society of Veterinary Physiologists and Pharmacologists—*Delaware Valley Suite A.*

Washington's Headquarters at Valley Forge is part of a historic state park approximately 20 miles from Philadelphia. Here the Continental Army encamped in the winter of 1777-1778.

## AVMA Officers, 1957-1958

President—W. W. Armistead, East Lansing, Mich.
President-Elect—R. E. Rebrassier, Columbus, Ohio.
Vice-President (Zone 1)—W. T. S. Thorp, St. Paul, Minn.
Vice-President (Zone 2)—M. H. Jacobs, Chestertown, Md.
Vice-President (Zone 3)—W. B. Castleberry, West Birmingham, Ala.
Vice-President (Zone 4)—Charles Parshall, Hayward, Calif.
Vice-President (At Large)—Martin P. Hines, Raleigh, N. Car.
Executive Secretary—J. G. Hardenbergh, Chicago, Ill.
Assistant Executive Secretary—H. E. Kingman, Jr., Chicago, Ill.
Treasurer—H. E. Kingman, Jr., Chicago, Ill.

## Executive Board

*(Year in which term expires is shown in parentheses)*

Chairman—L. M. Hutchings (1958), Lafayette, Ind.
District I—J. A. Henderson (1962), Guelph, Ont.
District II—S. F. Scheidy (1958), Drexel Hill, Pa.
District III—L. M. Hutchings, *ibid.*
District IV—McKenzie Heath (1959), Auburn, Ala.
District V—F. B. Young (1960), Waukee, Iowa.
District VI—J. M. Arburua (1961), San Francisco, Calif.
District VII—E. C. Stone (1960), Pullman, Wash.
District VIII—D. J. Anderson (1961), Fort Worth, Texas.
District IX—M. G. Fincher (1962), Ithaca, N. Y.
District X—W. O. Brinker (1959), East Lansing, Mich.

EX OFFICIO MEMBERS OF EXECUTIVE BOARD

W. W. Armistead (1959), East Lansing, Mich.
R. E. Rebrassier (1960), Columbus, Ohio.
W. O. Kester (1958), Washington, D. C.

## Board of Governors

L. M. Hutchings, *Chairman*; W. W. Armistead, R. E. Rebrassier.

## Advisory Committee—AVMA House of Representatives

W. T. Oglesby, Louisiana, Chairman.
C. A. Bjork, Oregon.
A. E. Coombs, Maine.
N. W. Pieper, Connecticut.
J. O. Knowles, Florida.
A. P. Schneider, Idaho.
E. W. Young, Washington, D. C.

## House of Representatives

*(As of May 15, 1958)*

| | Votes | Delegate | Alternate |
|---|---|---|---|
| Alabama | (3) | Thomas M. Miller | W. B. Castleberry |
| Arizona | (2) | K. O. Lassen | B. C. Ham |
| Arkansas | (2) | George T. Dugan | C. T. Mason |
| California | (5) | Charles J. Parshall | Fred B. Pulling, Jr. |
| Colorado | (3) | V. D. Stauffer | F. T. Candlin |
| Connecticut | (2) | Niel W. Pieper | Irving R. Vail |
| Delaware | (2) | Ernest L. Symington | Morris S. Cover |
| District of Columbia | (2) | E. R. Goode | William I. Gay |
| Florida | (3) | Jack O. Knowles | Karl R. Owens |
| Georgia | (3) | C. C. Von Gremp | Thomas J. Jones |
| Idaho | (2) | A. P. Schneider | L. V. Ruebel |
| Illinois | (5) | A. G. Misener | C. M. Rodgers |
| Indiana | (4) | Homer D. Carter | George W. Gillie |
| Iowa | (5) | C. D. Lee | F. J. Linn |
| Kansas | (3) | Forrest L. Hart | Joe F. Knappenberger |
| Kentucky | (3) | H. A. Gray | T. S. Maddox |
| Louisiana | (3) | W. T. Oglesby | J. E. Blunschi, Jr. |
| Maine | (2) | Alfred E. Coombs | F. Langdon Davis |
| Maryland | (2) | Marvin H. Jacobs | Irvin W. Frock |
| Massachusetts | (3) | C. M. de Varennes | P. R. Granholm |
| Michigan | (5) | Richard G. Pearce | J. A. Hergott |
| Minnesota | (5) | C. H. Wetter | R. Leland West |
| Mississippi | (2) | Andy Crawford | J. V. Duckworth |
| Missouri | (4) | Paul L. Spencer | Oren E. Ellis |
| Montana | (2) | A. F. Hayes | Jay H. Newhall |
| Nebraska | (3) | E. W. Peck | |
| Nevada | (1) | W. F. Fisher | John L. O'Harra |
| New Hampshire | (2) | Paul E. Fessenden | Frederick H. Stevens |
| New Jersey | (3) | Oscar Sussman | Robert R. Shomer |
| New Mexico | (2) | Tom Evans | |
| New York | (5) | Harry G. Hodges | C. H. Hoppenstedt |
| North Carolina | (3) | Adam A. Husman | Martin P. Hines |
| North Dakota | (2) | D. F. Eveleth | D. A. Wire |
| Ohio | (5) | A. G. Madden, Jr. | Berlin W. Kagy |
| Oklahoma | (3) | Lewis H. Moe | Frank R. Knotts |
| Oregon | (3) | Clifford A. Bjork | O. H. Muth |
| Pennsylvania | (5) | Raymond C. Snyder | J. Robert Brown |
| Rhode Island | (1) | James W. Armstrong | Ralph Povar |
| South Carolina | (2) | M. R. Blackstock | B. C. McLean |
| South Dakota | (2) | Daniel L. Cotton | John L. Noordsy |
| Tennessee | (3) | E. M. Spence | Hugh L. Lamb |
| Texas | (5) | Paul B. Blunt | Walter F. Juliff |
| Utah | (2) | F. James Schoenfeld | |
| Vermont | (2) | Wendall S. Wakefield | A. E. Janawicz |
| Virginia | (3) | O. F. Foley | O. L. Boyd |
| Washington | (4) | John D. Stevens | George C. Mank |
| West Virginia | (2) | V. H. Miller | Harry J. Fallon |
| Wisconsin | (5) | E. A. Woelffer | D. E. Kelley |
| Wyoming | (2) | P. E. Madsen | G. H. Good |
| Air Force | (2) | Robert R. Miller | Charles H. Snider |
| Army | (2) | Elmer W. Young | Russell McNellis |
| NAFV* | (2) | L. T. Hopkins | E. E. Saulmon |
| Canal Zone | (1) | Willys E. Lord | K. C. Zimmerman |
| Hawaii | (1) | William F. Parker | |
| Puerto Rico | (1) | Herbert R. Gomez | Carlos J. Cardona |
| Alberta | (2) | J. E. Rattray | J. G. Anderson |
| British Columbia | (2) | Leslie T. Clarkson | D. Allan Perry |
| Manitoba | (2) | | |
| New Brunswick | (1) | J. F. Frank | A. E. McQuinn |
| Nova Scotia | (1) | E. E. I. Hancock | A. R. Main |
| Ontario | (5) | E. F. Pallister | W. R. Mitchell |
| Quebec | (5) | Laurent Choquette | Roland Filion |
| Saskatchewan | (2) | J. S. Fulton | G. F. Hamilton |
| Cuba | (5) | Roberto Parajon | Angel M. Morales |

*National Association of Federal Veterinarians

# Agenda—House of Delegates

*Pennsylvania Ballroom, West, Hotel Sheraton*

First Session—1:30 p.m., Friday, August 15.
Second Session—10:00 a.m., Saturday, August 16.
Third Session—1:30 p.m., Saturday, August 16.

## Order of Business

Presiding: President-Elect R. E. Rebrassier.
Call to Order.
Roll Call.

1) Presentation of Minutes—1957 Session.
2) President's Address—W. W. Armistead.
3) Action on Constitution and Bylaws.
4) Proposals for Honorary Membership.
5) Reports of Officers and Headquarters Staff.
   *a*) Report of the Treasurer—H. E. Kingman, Jr.
   *b*) Report of Executive Secretary—J. G. Hardenbergh.
      1) Membership status.
      2) Finances.
      3) Publications—W. A. Aitken; Helen S. Bayless.
      4) Membership services—R. G. Rongren.
      5) Professional Relations—H. E. Kingman, Jr.
      6) Public Relations and Information—Brian Forster.
      7) Washington Office—J. A. McCallam.
6) Report of Executive Board—L. M. Hutchings, *Chairman*
   *a*) Board of Trustees—Research Fund.
   *b*) Board of Trustees—Group Insurance Trust.
   *c*) Budget.
   *d*) Membership matters.
   *e*) Supplemental Reports.
7) Reports of Councils and Committees.
   *a*) Biological Products.
   *b*) Ethics.
   *c*) Council on Education.
   *d*) Food Hygiene.
   *e*) History.
   *f*) Joint Committee on Foods.
   *g*) Legislation.
   *h*) Nutrition.
   *i*) Parasitology.
   *j*) Poultry Diseases.
   *k*) Public Relations.
   *l*) Registry of Veterinary Pathology.
   *m*) Research Council.
   *n*) Subcommittee on Veterinary Items, NFC.
   *o*) Therapeutic Agents.
   *p*) Animal Reproduction and Artificial Insemination.
   *q*) Humane Act Award.
   *r*) Nomenclature of Diseases.
   *s*) Public Health and Zoonoses.
   *t*) Veterinary Service.
8) Introduction of Resolutions.
9) Nomination of Officers.

*(Continued on page 14)*

10) Election of Council and House Committee Members.
11) Action on Proposals for Affiliate and Honorary Members.
12) New Business.
   *a*) Reports of Reference Committees.
      1) Reports of Officers.
      2) Public Relations and Veterinary Service.
      3) Veterinary Education.
      4) Internal Affairs.
      5) Legislation.
      6) Veterinary Military Affairs and Civil Defense.
      7) Miscellaneous matters.
   *b*) Invitations for Annual Convention.
   *c*) Other New Business.

Adjournment.

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## Executive and Legislative Sessions

### Hotel Sheraton

**Tuesday, August 12**

9:00 a.m. Board of Governors and Committee on Budget—Connie Mack Room.
8:00 p.m. Executive Board Reference Committee A—Delaware Valley Suite A.
8:00 p.m. Executive Board Reference Committee B—Delaware Valley Suite B.
8:00 p.m. Executive Board Reference Committee C—Delaware Valley Suite C.

**Wednesday, August 13**

9:00 a.m. Executive Board, first session—Constitution Room.
1:30 p.m. Executive Board, second session—Constitution Room.
8:00 p.m. Executive Board, third session—Constitution Room.

**Thursday, August 14**

9:00 a.m. Executive Board, fourth session—Constitution Room.
1:00 p.m. Advisory Committee to the House of Delegates—Connie Mack Room.
1:30 p.m. Board of Governors—Delaware Valley Suite C.

**Friday, August 15**

9:00 a.m. Advisory Committee to the House of Delegates—Connie Mack Room.
1:30 p.m. House of Delegates, first session—Pennsylvania Ballroom.
4:00 p.m. House Reference Committee No. 1—Room 531.
House Reference Committee No. 2—Room 522.
House Reference Committee No. 3—Room 533.
House Reference Committee No. 4—Room 524.
House Reference Committee No. 5—Room 525.
House Reference Committee No. 6—Room 526.
House Reference Committee No. 7—Room 527.

(House Reference Committees will meet on Saturday morning, if necessary.)

**Saturday, August 16**

10:00 a.m. House of Delegates, second session—Pennsylvania Ballroom.
2:00 p.m. House of Delegates, third session—Pennsylvania Ballroom.

**Thursday, August 21**

12:30 p.m. Executive Board, final session—Constitution Room.

## Motels in Philadelphia

The following are recommended motels in the Philadelphia area which you may contact personally for accommodations. To secure preferred attention, may we suggest that you mention the Philadelphia Convention and Visitors' Bureau in making your reservation.

GENERAL LAFAYETTE MOTEL.—Route U.S. 202 and 23, King of Prussia, Pa., 18 miles from Philadelphia.
*Rates.*—Singles $8.00; Doubles $10.00; Twins $13.00 & $14.00.

HOWARD JOHNSON'S MOTOR LODGE OF HORSHAM.—Route 611, Horsham, Pa., 19½ miles from Philadelphia.
*Rates.*—Singles $8.00; Doubles $8.00; Twins $12.00 to $14.00.

PHILADELPHIA INTERNATIONAL AIRPORT MOTEL.—Philadelphia International Airport, Philadelphia, Pa., 6 miles from center of city.
*Rates.*—Doubles $10.00; Twins $9.00.

ROSE HAVEN MOTEL.—Route 130, Crescent Boulevard, Gloucester, N. J., 6 miles from Philadelphia.
*Rates.*—Singles $7.00; Doubles $8.00; Twins $9.00.

TALLY HO HOTEL-MOTEL.—Route 202, New Centerville, Pa., 17 miles from Philadelphia.
*Rates.*—Singles $9.00 & $10.00; Doubles $13.00 & $14.00; Twins $13.00 and $14.00.

CHERRY HILL INN.—Box 299, Route 38, Haddonfield, N. J., 4 miles from Philadelphia.
*Rates.*—Singles $10.00; Twins $15.00 and $18.00.

CROSS ROADS MOTEL.—DeKalb Pike, Route 202, Norristown, Pa., 18 miles from center of city.
*Rates.*—Singles $7.00 & $8.00; Doubles $10.00; Twins $12.00.
*All rates subject to change.*

## Automobile Parking Facilities in Philadelphia

*Hotel Sheraton*
Official hotel garage—$2 for 24 hours (pick-up and delivery charge—25 cents each way).
Open lots at 17th and Arch Sts. and 17th and Parkway—$1 per day (no watchman at night).

*Robert Morris Hotel*
Official hotel garage—$1.50 for 24 hours.
Open lots at 17th and Arch Sts. and 17th and Parkway—$1 per day (no watchman at night).

*Warwick Hotel*
Chancellor Parkade across the street from the hotel entrance—$1.75 for 24 hours.

*Bellevue Stratford Hotel*
Elgin Parking at Chancellor and Juniper Sts.—$1.85 for 24 hours; 1413 Locust St.—$1.75 for 24 hours.

*Sylvania Hotel*
(Same facilities for parking as the Bellevue Stratford Hotel above).

*Benjamin Franklin Hotel*
Thrift Parking at the northeast corner of 8th and Chestnut Sts.—$1.75 for 24 hours.

*Penn Sherwood Hotel*
Official parking lot next to the hotel on Chestnut St.—$1.50 for 24 hours.

*Convention Hall*
Parking—65 cents for the day (unattended after midnight).

## Television at Philadelphia

The televised (closed circuit) portion of the Section programs are made possible by the generous support of Allied Laboratories, Inc., in cooperation with Radio Corporation of America.

Dr. L. E. Fisher

Dr. L. E. Fisher of Riverside, Ill., has been the coordinator of the television programs since their initiation. He spends most of every convention day behind the scenes in the television quarters, coordinating the work of the demonstrators and the commentators, so that a smooth presentation comes through on the screen. Dr. Fisher also often acts as commentator.

## Point Credits for Reserve Officers

Veterinarians holding Reserve commissions in the Army Veterinary Corps, *who are not on active duty,* may receive Reserve credit for attending the AVMA Convention in Philadelphia. This arrangement has been approved by the Commanding General, U.S. Continental Army Command.

Such Reserve officers of the Army are eligible to earn training and retirement point credits, providing such attendance at any session of the convention is for a period of not less than two hours and that the officer registers for each day he attends the convention. Not more than one credit can be granted for any single calendar day. Provisions will be made for enrollment near the convention registration desk. At time of enrollment, for this Reserve credit, appropriate instructions will be provided the Reserve officer concerned.

## Opening Session

*Convention Hall*

**Monday, August 18, 9:30 a.m.**

Music

**10:00 a.m.**

*Call to Order*—President W. W. Armistead.

*Invocation.*

*The National Anthem.*

*Address of Welcome*—The Honorable Richardson Dilworth, Mayor of Philadelphia.

*Greetings from Women's Auxiliary*—Mrs. L. H. Moe, President, Stillwater, Okla.

*Address*—R. E. Rebrassier, President-Elect, Columbus, Ohio.

*Announcements*—Dr. Mark Allam, Co-General Chairman, Committee on Local Arrangements.

*Introduction of Guests.*

*Presentation of Awards:*

By Dr. W. A. Young, Chairman, Special Committee on Humane Act Award: 1958 Humane Act Award.

By Dr. W. W. Armistead, Chairman *ex officio*, Committee on Awards: Twelfth International Veterinary Congress Prize.

Borden Award for 1958.

AVMA Award.

Gaines Award.

*Address*—Impact of Present Socioeconomic Conditions on the Practice of Medicine and Veterinary Medicine.

*Dr. James Z. Appel, Trustee, American Medical Association, Lancaster, Pa.*

### General Convention Entertainment—Philadelphia

Monday, August 18, 12:30 p.m.
AVMA Golf Tournament—*Aronimink Country Club*

Wednesday, August 20
12:30 p.m.
Alumni Luncheons—*Convention Hall*

8:00 p.m.
President's Reception and Dance
Installation of Officers of the AVMA and Women's Auxiliary
Entertainment
*Convention Hall*

## Section on General Practice

**Monday, August 18, 1958, 1:25 p.m.**

*Arena, Convention Hall*

Lyle Compton, *Chairman* R. E. McKinley, *Secretary*

### First Session

1:25 Opening Remarks by the Chairman

1:30 (1) Displacements of Abdominal Viscera of Cattle.
*G. R. Moore, East Lansing, Mich.*

2:00 (2) Television—(jointly with Section on Public Health)—Radiation Biology in Veterinary Education and Research.
*C. L. Comar, Ithaca, N. Y.*

2:30 (3) The Influence of Hormones on Nutrition.
*J. D. Alexander, Philadelphia, Pa.*

3:00 Appointment of Nominating Committee.

3:10 (4) Some Practical Aspects in Beef Cattle Practice.
*C. T. Mason, Little Rock, Ark.*

3:40 (5) Infusion Treatment for Retained Placenta in the Cow.
*J. K. Bossbart, Camden, N. Y.*

4:00 (6) Television—Handling Foot Troubles in Cattle.
*C. R. Leahy, Whitney Point, N. Y.*

4:20 (7) Virus Diarrhea and Similar Diseases of Cattle.
*Peter Olafson, Ithaca, N. Y.*

Adjournment at 4:45 p.m.

# Section on Public Health

## Monday, August 18, 1958, 1:00 p.m.

*Ballroom, Convention Hall*

E. S. Tierkel, *Chairman* Ernest J. Witte, *Secretary*

### First Session

1:00 Opening Remarks by Chairman

1:05 (8) Motion Picture—Explorations in Laboratory Animal Care.
*B. J. Cohen, Los Angeles, Calif.*

1:30 (9) A Study of Unknown Viruses Isolated from Bovine Tests and Their Possible Relationship to Human Disease.
*Morton Klein, Philadelphia, Pa.*

2:00 (2) Television—(jointly with Section on General Practice)—Radiation Biology in Veterinary Education and Research.
*C. L. Comar, Ithaca, N. Y.*

2:30 (10) An Experimental Study of Adeno Virus Types II, III, IV, and VII Observed in Dogs and Cats in Their Possible Role as Healthy Carriers and in Transmission of the Virus.
*S. K. Sinha and L. W. Fleming, Kansas City, Mo.*

3:00 Appointment of Nominating Committee.

3:10 (11) Television—Recent Developments on Laboratory Diagnosis of Leptospirosis.
Demonstrators—*R. W. Menges and Mildred M. Galton, Atlanta, Ga.*
Narrator—*R. D. Courter, Atlanta, Ga.*

3:40 (12) Enteroviruses of Swine. II. Their Identification and Studies on Their Pathogenesis in a Herd of Swine.
*G. W. Beran, A. A. Werder, and H. A. Wenner, Kansas City, Kan.*

4:00 (13) An Epidemiological Approach to Canine Lymphoma and Its Public Health Significance.
*Daniel Cohen, Stella Booth, and Oscar Sussman, Trenton, N.J.*

Adjournment at 4:30 p.m.

## Section on General Practice

### Tuesday, August 19, 1958, 8:30 a.m.

*Arena, Convention Hall*

Lyle Compton, *Chairman* R. E. McKinley, *Secretary*

### Second Session

8:30 (14) Swine Disease Diagnosis (Illustrated).
*P. C. Bennett, Ames, Iowa.*

8:55 (15) Some Metabolic Derangements Associated with Magnesium Metabolism in Cattle.
*R. R. Marshak, Philadelphia, Pa.*

9:20 (16) Some Interesting Developments in Infectious Diseases of Sheep.
*D. G. McKercher, E. M. Wada, and E. L. Biberstein, Davis, Calif.*

9:50 (17) Television—Gadgets and Tips for the Large Animal Practitioner.
*C. T. Mason, Little Rock, Ark.*

10:10 (18) The Field Diagnosis of Bovine Malignant Catarrhal Fever.
*R. N. Berkman, Greenfield, Ind., R. D. Barner and C. C. Morrill, East Lansing, Mich.*

10:30 (19) Ruminant Ketosis—Deficiency Disease or Metabolic Defect?
*R. B. Johnson, College Park, Md.*

10:55 Report of Nominating Committee.

11:00 (20) Television—Practical Teat Surgery.
*D. A. Wiley, Jarrettsville, Md.*

11:20 (21) A Survey of Some Newer Therapeutic Agents.
*J. E. Martin, Philadelphia, Pa.*

Adjournment at 11:40 a.m.

## Section on Public Health

### Tuesday, August 19, 1958, 8:30 a.m.

*Room 200, Convention Hall*

E. S. Tierkel, *Chairman* Ernest J. Witte, *Secretary*

### Second Session

8:30 (22) Motion Picture—Rabies Control in the Community.
*Produced by Communicable Disease Center, U.S.P.H.S.*

9:00 (23) Bovine Brucellosis Eradication.
*C. K. Mingle, Washington, D.C.*

9:30 (24) Response of Individuals to Injection with Ether-Killed Brucella Vaccine.
*I. Live and B. Wolf, Philadelphia, Pa.*

10:00 (25) Veterinary Research in Air Pollution.
*E. J. Catcott, Los Angeles, Calif.*

10:20 Report of Nominating Committee.

10:30 (26) An Outbreak of Inhalation Anthrax Among Goat Hair-Processing Workers.
*Philip Brachman, S. A. Plotkin, Philadelphia, Pa.; F. H. Bumford and Mary M. Atchinson, Concord, N. H.*

10:50 (27) The Oklahoma-Kansas Anthrax Outbreak of 1957.
*G. B. Van Ness, Washington, D.C.; S. A. Plotkin, Philadelphia, Pa.; R. H. Huffaker, Sr., Los Angeles, Calif.; and W. G. Evans, St. Paul, Minn.*

11:10 Discussion.
*Philip Brachman, Philadelphia, Pa.*

Adjournment at 11:30 a.m.

## Section on Small Animals

### Tuesday, August 19, 1958, 8:30 a.m.

*Ballroom, Convention Hall*

James Mark, *Co-Chairman*
E. E. Ruebush, *Co-Chairman*
Jean Holzworth, *Secretary*

### First Session

8:30 Opening Remarks by the Chairman.

8:35 (28) Motion Picture—Kidney Function in Health, Part I.
*Produced by Eli Lilly and Company, Indianapolis, Ind.*

9:15 (29) Television—Clinicopathological Conference: Case Presentation, Part I.
*R. S. Brodey, Klaus Hubben, J. H. Mark, J. T. McGrath, H. A. Reynolds, W. H. Rhodes, R. M. Sauer, J. F. Skelley, Veterinary Hospital Staff, University of Pennsylvania.*

9:45 (30) Canine Bone Tumors.
*R. S. Brodey, Philadelphia, Pa.*

10:25 (31) Television—The Technique for Making Canine Electrocardiographic Tracings.
*R. W. Kirk, Ithaca, N.Y.*

10:45 (32) Cross-Specie Grafting Procedures with Anorganic Bone.
*H. W. Lyon, Bethesda, Md.*

11:15 Appointment of Nominating Committee.

11:25 Question and Answer Period.

Adjournment at 12:00 noon.

## Combined Section on General Practice and Small Animals

### Tuesday, August 19, 1958, 1:30 p.m.

*Arena, Convention Hall*

1:30 (33) Television—Skin Diseases in Small Animals.
*Frank Kral, Philadelphia, Pa.*

2:10 (34) Preanesthetic Agents.
*R. D. Dripps, Philadelphia, Pa.*

2:50 (35) Television—Valvular Mechanisms as Demonstrated on the Pulse Duplicator.
*J. C. Davila, R. P. Glover, and R. G. Trout, Philadelphia, Pa.*

3:20 (36) The Practice of Veterinary Medicine in a Changing World.
*Evan B. Alderfer, Philadelphia, Pa.*

3:50 (37) Panel—Veterinary Economics.
*Moderator—R. E. McKinley, Erie, Pa.*
*E. J. Frick, Manhattan, Kan.*
*Robert Ormsbee, Stockton, Calif.*
*R. P. Knowles, Miami, Fla.*

Adjournment at 5:00 p.m.

## Section on Research

### Tuesday, August 19, 1958, 1:25 p.m.

*Room 200, Convention Hall*

W. D. Pounden, *Chairman* D. K. Detweiler, *Secretary*

### First Session

1:25 Opening Remarks by the Chairman.

1:30 (38) The Control of Respiration During Anesthesia.
*J. H. Gans and A. L. Aronson, Ithaca, N.Y.*

1:55 (39) The Electrocardiogram of the Horse.
*D. B. Glazier, Dublin, Eire.*

2:20 (40) Anatomical and Functional Studies on the Coronary Circulation in the Dog and Pig.
*G. C. Christensen, Ames, Iowa, and F. L. Campeti, Rochester, N.Y.*

2:45 (41) Age Changes in the Uteri of Swine.
*R. Hadek and R. Getty, Ames, Iowa.*

3:05 Appointment of Nominating Committee.

3:10 (42) Protein Regeneration Cycle in Sheep.
*T. R. Houpt, Philadelphia, Pa.*

3:35 (43) Cardiovascular and Blood-Gas Changes in Acute Induced Tympany in Sheep.
*R. W. Dougherty, W. E. Stewart, and Ivan Lindahl, Ithaca, N.Y.*

4:00 (44) Estrogenic Effect on Breeding Ewes of Hormone-like Substances in Pasture Plants.
*V. L. Sanger and D. S. Bell, Wooster, Ohio.*

Adjournment at 4:30 p.m.

## Section on Research

### Wednesday, August 20, 1958, 8:30 a.m.

*Room 200, Convention Hall*

W. D. Pounden *Chairman* D. K. Detweiler, *Secretary*

### Second Session

8:30 (45) The Microbiological Aspects of Calf Enteritis with Correlated Therapeutic Studies.
*J. C. Osborne, R. D. Mocherie, and E. G. Batte, Raleigh, N. Car.*

9:00 (46) Congenital Erythropoietic Bovine Porphyria.
*F. A. Spurrell, Victor Perman, H. H. Hoyt, St. Paul, Minn.*

9:30 (47) Studies on Septicemic Pasteurellosis in Lambs.
*E. L. Biberstein and P. C. Kennedy, Davis, Calif.*

10:00 (48) Dental X-Ray Technique in Cattle.
*P. V. Christofferson, Provo, Utah, and M. B. Weiss, Chicago, Ill.*

10:25 Report of Nominating Committee.

10:30 (49) Isolation, Propagation, and Diagnostic Studies on Bluetongue Virus in Tissue Culture.
*M. V. Fernandes, Lisbon, Portugal.*

11:00 (50) Pathogenesis of Lesions in the Central Nervous System of Dogs Caused by *Toxoplasma Gondii*.
*Adalbert Koestner, Columbus, Ohio.*

11:20 (50a) Nocardia Asteroides in Bovine Mastitis.
*A. C. Pier, M. J. Fossatti, D. M. Gray, Davis, Calif.; and E. M. Willers, Honolulu, Hawaii.*

Adjournment at 11:45 a.m.

## Section on Small Animals

### Wednesday, August 20, 1958, 8:30 a.m.

*Arena, Convention Hall*

James Mark, *Co-Chairman*
E. E. Ruebush, *Co-Chairman*
Jean Holzworth, *Secretary*

### Second Session

8:30 (51) Motion Picture—Kidney Function in Disease, Part II.
*Produced by Eli Lilly and Company, Indianapolis, Ind.*

9:20 (52) Modern Animal Hospital Management.
*R. P. Knowles, Miami, Fla.*

9:50 (53) Television—Clinicopathological Conference: Case Presentation, Part II.
*R. S. Brodey, Klaus Hubben, J. H. Mark, J. T. McGrath, H. A. Reynolds, W. H. Rhodes, R. M. Sauer, J. F. Skelley, Veterinary Hospital Staff, University of Pennsylvania.*

10:10 (54) Motion Picture—The Surgical Removal of Subcutaneous Tumors in the Parakeet.
*C. P. Gandal, New York, N.Y., and L. Z. Saunders, Philadelphia, Pa.*

10:20 (55) Television—Antepubic Urethrostomy in the Domestic Male Cat.
*Demonstrator—Robert M. McCully, Washington, D.C.*
*Narrator—Jean Holzworth, Boston, Mass.*

10:45 (56) Panel on Liver Diseases.
*Moderator—D. L. Coffin, New York, N.Y.*
*T. O. Munson, Boston, Mass.*
*J. Bentinck-Smith, Ithaca, N.Y.*
*Frank Bloom, Flushing, N.Y.*
*Svend Nielsen, Columbus, Ohio.*

11:30 Question and Answer Period.

Adjournment at 12:00 noon.

## Section Officers—Philadelphia Session

### Section on General Practice

Lyle Compton, Clymer, N.Y., Chairman

R. E. McKinley, Erie, Pa., Secretary

### Section on Research

W. D. Pounden, Wooster, Ohio, Chairman

D. K. Detweiler, Broomall, Pa., Secretary

### Section on Small Animals

James Mark, Bryn Mawr, Pa., Co-Chairman

E. E. Ruebush, Silver Spring, Md., Co-Chairman

Jean Holzworth, Boston, Mass., Secretary

## Section Officers—Philadelphia Session

### Section on Poultry

P. P. Levine, Ithaca, N.Y., Chairman

M. S. Cover, Newark, Del., Secretary

### Section on Surgery and Obstetrics

W. F. Riley, Jr., East Lansing, Mich., Chairman

S. J. Roberts, Ithaca, N.Y., Secretary

### Section on Public Health

E. S. Tierkel, Atlanta, Ga., Chairman

Ernest J. Witte, Harrisburg, Pa., Secretary

## Section on Poultry

### Wednesday, August 20, 1958, 8:45 a.m.

*Ballroom, Convention Hall*

P. P. Levine, *Chairman* M. S. Cover, *Secretary*

### First Session

8:45 Opening Remarks by the Chairman.

8:50 (57) Serological Differentiation of Avian PPLO.
*A. L. Kleckner, Athens, Ga.*

9:10 (58) Television—Hemagglutination of Infectious Bronchitis Virus.
*Demonstrator—L. J. Corbo, Gainesville, Fla.*
*Narrator—C. H. Cunningham, East Lansing, Mich.*

9:35 (59) Strains of Pleuropneumonia-like Organisms.
*H. E. Adler, Jeri Ann Berg, and M. Asdell, Davis, Calif.*

9:55 Appointment of Nominating Committee.

10:00 (60) Isolation and Identification of Bacterial "L" Forms of Avian Origin.
*R. F. Gentry, University Park, Pa.*

10:25 (61) Studies on Pathogenic Newcastle Disease Virus Contaminants in Newcastle Disease Wing-Web Vaccines.
*A. S. Rosenwald, Davis, Calif.; R. P. Hanson, Madison, Wis.; and C. A. Brandly, Urbana, Ill.*

10:50 (62) Tissue Culture of Avian Visceral Lymphoid Tumors and *in Vitro* Serial Passage of the Virus.
*Olive S. Davis and D. P. Gustafson, Lafayette, Ind.*

11:15 (63) New Coccidiostats for the Poultry Industry.
*E. F. Waller, Newark, Del.*

Adjournment at 11:45 a.m.

## Combined Section on Poultry, Research, and Public Health

### Wednesday, August 20, 1958, 2:00 p.m.

*Ballroom, Convention Hall*

2:00 (64) Gerontological Studies in Domestic Animals, Their Implications and Applications.
*Robert Getty, Ames, Iowa.*

2:20 (65) Cardiovascular-Pulmonary Studies in Giraffes and Cattle.
*J. L. Patterson, Jr., Richmond, Va.; J. V. Warren, Durham, N. Car.; J. T. Doyle, Albany, N.Y.; Otto Gauer, Bad Nauheim, Germany; E. N. Keen, Cape Town, South Africa; R. H. Goetz, New York, N.Y.; Maurice McGregor, Montreal, Canada; D. K. Detweiler and Monica Reynolds, Philadelphia, Pa.*

2:40 (66) The Histopathology of Experimental Ornithosis in Turkeys.
*J. N. Beasley and L. C. Grumbles, College Station, Texas, and D. E. Davis, Mexico City, Mexico.*

3:00 (67) The Pathological Response of the Chicken Embryo to Certain Avian Viruses.
*Roy Casorso and E. L. Jungherr, Storrs, Conn.*

3:20 (68) Parthenogenetic Development in Eggs of Beltsville Small White Turkeys.
*M. W. Olsen, Beltsville, Md.*

3:40 (69) Variation in Pathological Response Elicited by Propagated Avian Oncogenic Virus Strain.
*M. A. Gross and B. R. Burmester, East Lansing, Mich.*

4:00 (70) Experimental Production of Congestive Heart Failure in Dogs.
*Dorothy Piatnek and R. E. Olson, Pittsburgh, Pa.*

Adjournment at 4:30 p.m.

## Section on Surgery and Obstetrics

### Wednesday, August 20, 1958, 2:00 p.m.

*Arena, Convention Hall*

W. F. Riley, Jr., *Chairman* S. J. Roberts, *Secretary*

### First Session

2:00 (71) Television—The Use of Tranquilizers in Cattle and Horses.
*Demonstrators—A. C. Sayers, Philadelphia, and C. J. Bryer, Gap, Pa.*
*Narrator—C. W. Raker, Philadelphia, Pa.*

2:20 (72) Surgical Management of Tendinitis in Horses (Illustrated).
*D. L. Proctor, Lexington, Ky.*

2:40 (73) Television—Suturing the Bovine Teat.
*Demonstrator—J. P. Arnold, St. Paul, Minn.*
*Narrator—A. F. Weber, St. Paul, Minn.*

3:00 (74) Cystic Corpora Lutea in Cattle (Illustrated).
*Kenneth McEntee and W. C. Wagner, Ithaca, N.Y.*

3:20 (75) Television—Belgian Modification of Minchev's Operation for Prolapse of the Vagina in the Cow.
*Demonstrator—V. A. Carlson, Acton, Mass.*
*Narrator—Cornelius Thibeault, Wakefield, Mass.*

3:30 (76) Television—A New Instrument for Obstetrical Operations.
*Demonstrator—T. L. Knapstein, Greenville, Wis.*
*Narrator—Quinton Metzig, Oshkosh, Wis.*

3:35 (77) Surgical Treatment of Apex and Base Fractures of the Proximal Sesamoid in Horses.
*Jacques Jenny and C. W. Raker, Philadelphia, Pa.*

3:55 Appointment of Nominating Committee.

4:00 (78) Seminar Session—Infertility and Cattle Practice. (Room 300).
*Moderator—Arthur Bartenslager, Churchville, Va.*
*E. A. Woelffer, Oconomowoc, Wis.*
*P. M. Hinze, Carnation, Wash.*
*W. J. Gibbons, Auburn, Ala.*
*J. A. Deubler, Newtown, Pa.*
*Kenneth McEntee, Ithaca, N.Y.*

4:00 (79) Seminar—Equine Practice. (Room 200).
*Moderator—E. A. Churchill, Centreville, Md.*
*W. O. Reed, Elmont, N.Y.*
*D. L. Proctor, Lexington, Ky.*
*B. F. Brennan, Westbury, N.Y.*
*C. W. Schulz, College Station, Texas*
*W. C. Banks, College Station, Texas.*

Adjournment at 5:00 p.m.

## Section on Surgery and Obstetrics

### Thursday, August 21, 1958, 8:15 a.m.

*Arena, Convention Hall*

W. F. Riley, Jr., *Chairman* S. J. Roberts, *Secretary*

### Second Session

8:15 (80) Motion Picture—Frozen Semen in Canada.
*J. W. Macpherson, Guelph, Canada.*

8:35 (81) Infertility in Beef Cattle.
*Arthur Bartenslager, Churchville, Va.*

8:55 (82) Bovine Vaginitis (Illustrated).
*John Kendrick, Davis, Calif.*

9:15 (83) The Role of the Veterinarian in Artificial Insemination.
*E. B. Smith, Canton, N.Y.*

9:35 (84) Television—Magnetic Removal of Foreign Bodies from the Reticulum of the Cow by Paracentesis.
*Demonstrators—V. A. Carlson, Acton, Mass., and R. D. Hoffman, Bedford, Pa.*

9:50 Report of Nominating Committee.

9:55 (85) Diagnosis and Treatment of Nonspecific Infertility in the Dairy Cow.
*P. M. Hinze, Carnation, Wash.*

10:25 (86) Two Surgical Procedures in Sheep (Illustrated).
*F. D. Horney, Guelph, Ontario.*

10:45 (87) Vibrionic Abortion in Sheep.
*Rue Jensen and V. A. Miller, Fort Collins, Colo.*

11:00 (88) The Current Status of Bovine Dwarfism.
*L. M. Julian, Davis, Calif.*

11:20 (89) The Philosophy and Technique of Evaluation of Bulls for Breeding Soundness.
*H. J. Hill, Denver, Colo.*

11:40 (90) Television—The Spay Hook in Baby Pig Castration.
*V. L. Sanger, Wooster, Ohio.*

(91) Television—First Aid Treatment of Fractures in Large Animals.
*Demonstrator—Jacques Jenny, Philadelphia, Pa.*
*Narrator—W. O. Reed, Elmont, N.Y.*

(92) Television—The Walking Cast.
*L. E. Johnson, Columbus, Ohio.*

Adjournment at 12:00 noon.

## Section on Small Animals

### Thursday, August 21, 1958, 8:45 a.m.

*Ballroom, Convention Hall*

James Mark, *Co-Chairman*
E. E. Ruebush, *Co-Chairman* — Jean Holzworth, *Secretary*

### Third Session

8:45 (93) Motion Picture—Disorders of the Heart Beat.
*Produced by American Heart Association and Wyeth Laboratories.*

9:05 (94) The Management of Uremia in Dogs.
*W. R. Guild, Boston, Mass.*

9:45 (95) Nutritional Requirements of Cats.
*S. N. Gershoff, Boston, Mass.*

10:25 (96) Toxoplasmosis in Pet Animals—A Public Health Problem?
*D. E. Eyles, Memphis, Tenn.*

10:55 Report of Nominating Committee.

11:00 (97) Dark Room Pathology.
*L. D. Field, Jr., Wynnewood, Pa.*

11:30 Questions and Answers.

Adjournment at 12:00 noon.

## Section on Poultry

### Thursday, August 21, 1958, 9:00 a.m.

*Room 200, Convention Hall*

P. P. Levine, *Chairman* M. S. Cover, *Secretary*

### Second Session

9:00 (98) The Prophylactic Effect of Antibiotics and Other Therapeutic Agents *in Vivo* Against Bluecomb Disease in Poults.
*J. T. Tumlin and B. S. Pomeroy, St. Paul, Minn.*

9:25 (99) Antigenic and Cross-Immunity Studies on Different Isolates of Infectious Bronchitis Virus.
*M. S. Hofstad, Ames, Iowa.*

9:50 (100) Factors Affecting Interference of Newcastle Virus by Infectious Bronchitis Virus.
*L. E. Hanson and J. O. Alberts, Urbana, Ill.*

10:20 (101) The Surgical Removal of Subcutaneous Tumors in the Parakeet.
*C. P. Gandal, New York, N.Y., and L. Z. Saunders, Philadelphia, Pa.*

10:40 Report of Nominating Committee.

10:45 (102) Role of Adjuvants in Immunogenicity of Killed Newcastle Disease Vaccines.
*Eugene Gill, J. F. Sullivan, H. D. Stone, and A. S. Hundemann, Beltsville, Md.*

11:10 (103) The Differential Diagnosis of Infectious Synovitis, Infectious Hepatitis, and Sulfonamide Poisoning in Chickens.
*Martin Sevoian, Amherst, Mass.*

Adjournment at 11:35 a.m.

## The Scientific Exhibits

*The scientific exhibits at the Philadelphia meeting have been furnished by several educational institutions and governmental agencies. They are located in the Convention Hall with the commercial exhibits.*

*All veterinarians are urged to visit these exhibits which are designed to portray important aspects of problems requiring the profession's attention.*

### Air Force Base Veterinary Activities

*United States Air Force Medical Service*

This exhibit will present by means of color transparencies the functions performed by veterinary officers at an Air Force Base.

### The Beginnings of Veterinary Neuroanatomy

*Michigan State University, College of Veterinary Medicine*

The development of veterinary neuroanatomy is depicted in a series of illustrations from early veterinary and medical works. The original contributions of Carlo Ruini (1598), the first veterinary anatomist, and the plagiarisms of the farrier-anatomist, Andrew Saape (1683), are compared with contemporary and later works.

### Brucellosis Eradication

*United States Department of Agriculture*

A graphic, up-to-date report on the state-federal brucellosis eradication program is given at this exhibit.

### Chronology of Tooth Development in Cattle

*University of Illinois, College of Dentistry*

This exhibit will consist of detailed charts and x rays showing exact levels of enamel and dentin formation at different age periods. These form the basis of a new method of determining developmental age in cattle. A simple method of obtaining accurate x rays of the teeth in living cattle is also demonstrated.

### Highlights of a Decade of Progress in Health

*Pan American Sanitary Bureau, World Health Organization*

The exhibit consists of photographs and charts mounted on a stand, showing important developments in international public health in the Western Hemisphere during the period 1948 to 1957.

### Human Factors in Space Flight

*United States Air Force Medical Service*

This exhibit will consist of photographs and charts demonstrating research done with high altitude balloons and manned flights, including Major Simmon's 1957 flight.

### Human Tolerance to Mechanical Forces

*United States Air Force Medical Service*

Photographs, graphs, and models depicting research studies of human tolerance to mechanical forces—impact, abrupt windblast, pressure changes, and automotive crashes—at the Aero Medical Field Laboratory, Holloman Air Force Base, New Mexico, will be shown at this exhibit. Models include: Sonic No. 1 and No. 2 on long track, two sleds used on Daisy track, swing seat, and automotive crash barriers.

### Nuclear War and Survival

*Walter Reed Army Medical Center, Division of Veterinary Medicine*

The exhibit depicts certain hazards to survival of the population following nuclear war and presents possible emergency solutions. Captions outline the necessity of adequate food and water supplies for a population protected by shelters during the detonations. Minimum survival requirements for food and water and the probable associated hazards from various post attack sources are considered.

### Pathology of Experimental Animals Used in Acceleration and Deceleration Studies

*United States Air Force Medical Service*

Photographs will be shown at this exhibit depicting acceleration and deceleration studies utilizing animal subjects, and showing equipment utilized; and the comparative structural features of the subjects and their respective values for different force studies.

### Pathology in Poultry Inspection

*Agricultural Marketing Service, Poultry Division, U.S. Department of Agriculture*

Through the use of nine transparencies in color, this exhibit shows some types of disease conditions warranting condemnation, and actions taken to assure wholesomeness of poultry marketed for human food.

### Radiographic Contrast Mediums—Canine Medicine

*National Institutes of Health, Animal Hospital Section*

This exhibit is composed of 36, 8- by 10-inch radiographs and their labels. Eight films illustrate experimental contrast technique; eight illustrate use of log etronics to intensify low contrast films. The remaining films are routine radiographs using contrast mediums.

### Roentgen Diagnosis

*University of Pennsylvania, School of Veterinary Medicine*

This exhibit will demonstrate gross and roentgen manifestations of large and small animal pathological entities.

### U.S.D.A. Veterinarians

*U.S. Department of Agriculture*

The exhibit portrays inspection services rendered by veterinarians in animal disease eradication.

### Veterinarians in Federal Meat Inspection

*U.S. Department of Agriculture*

This exhibit tells the story of the veterinarian in federal meat inspection.

### Veterinary Medicine at the University of Illinois

*University of Illinois, College of Veterinary Medicine*

This exhibit is a pictorial presentation of a few of the major research projects now under way at the college, the professional education facilities, and extension activities.

## The Commercial Exhibits at Philadelphia

*The Commercial Exhibits to be presented at the Ninety-Fifth Annual AVMA Convention is the largest and most diversified showing of veterinary products and technical developments yet displayed. Over 85 companies, occupying 105 booths, will show the latest in modern hospital equipment and drugs which enable veterinarians to keep abreast of the times in their services to clients and patients.*

*The exhibits will be located in the Convention Hall, and we urge all veterinarians to take full advantage of the many fine displays.*

*In addition, the American Veterinary Exhibitors Association will again sponsor prizes, which has become a feature of the commercial exhibits at AVMA conventions. Be sure to obtain your tickets at the time of registration.*

*Again—Visit and enjoy the Commercial Exhibits.*

### Abbott Laboratories

*Booth 82*

The Veterinary Division of Abbott Laboratories will display both small and large animal products as follows: Seleen Suspension, Abbott's Selenium Sulfide preparation for control of nonspecific dermatoses and demodectic mange in dogs and cats; Sulvetil-ES, their erythromycin-streptomycin ointment with sulfanilamide for treatment of bovine mastitis, and Abbott's complete line of parenteral fluids for veterinary use.

### Albers Milling Company—Division of Carnation Company

*Booth 56*

The complete line of Friskies pet foods will be on display. Company personnel will be in attendance to answer questions on dog nutrition and kennel management. Material designed as a service for veterinarians will also be available.

### American Cyanamid Company—Veterinary Professional Department

*Booths 84 and 85*

The complete line of professional products will be displayed, with particular emphasis on the newer items: Varizyme for parenteral and topical use in all inflammations; and Cyvac, the combined distemper and hepatitis vaccine. Also all forms of Polyotic, the broad-spectrum antibiotic of choice. Copies of "A Legal Guide for the Veterinarian" and "Operative Surgery of the Dog" will be available to all visitors at our booth.

### American Optical Company, Instrument Division

*Booth 68*

American Optical Company, Instrument Division, of Buffalo, N.Y., will display and demonstrate a wide variety of precision optical instruments. Featured will be the AO Spencer Hb-Meter, representative models of the popular Microstar Laboratory Microscopes, Cyloptic Stereoscopic Microscopes, and the Ful-Vue Diagnostic Instrument Sets. Company representatives in attendance will welcome your visit.

### American Sterilizer Co.

*Booth 32*

Featured in this display of sterilization equipment will be three types of autoclaves: Model 613-R, the finest in quality workmanship; Model 8816, square in size (8 by 8 by 16 in.) and designed for increased loading capacity; and Model 1022, the unit for clinics or centralized sterilization. Ten inches square, this autoclave requires no plumbing connections and is completely automatic. Also demonstrated will be two 8- and 10-inch portable boiling-type units.

### Ames Company, Inc.

*Booth 48*

Featured at the Ames Company exhibit will be the latest developments in new, simplified diagnostic products, which are adaptable to the routine examination and management of the patient. The many advantages of the new diagnostic products are quickly demonstrable, and you are cordially invited to stop at the Ames booth to see them.

### Arista Surgical Company

*Booth 54*

A complete line of surgical instruments, both chrome and stainless steel, will be on display. Also featured will be catgut, silk, and nylon sutures; syringes and needles; bandages; feed pans; x-ray supplies; microscopes; operating tables; instrument trays and jars; sani-cages; steriliers; and autoclaves.

### Armour Veterinary Laboratories

*Booths 79 and 80*

The exhibit will feature highly purified pituitary hormones; Caminars, highly palatable oral medication for small animals; proteolytic and anti-inflammatory enzyme products.

### Arnold Laboratories

*Booth 61*

Arnold Pharmaceutical products will be featured.

### Association of American University Presses

*Booth 4*

Authoritative and outstanding books for veterinarians published by various university presses will be exhibited, including the most recent editions of such widely known titles as: Biester and Schwarte's "Diseases of Poultry," Dukes' "Physiology of Domestic Animals," Hagan and Bruner's "Infectious Diseases of Domestic Animals," and Jones' "Veterinary Pharmacology and Therapeutics."

### Atlas Canine Products, Inc.

*Booth 38*

Atlas Canine Products will display a new line of therapeutic diets for small animals. Literature and recently published research reports on new findings will be available to booth visitors. Also featured will be illuminated photomicrographs of special interest to veterinarians.

### A. J. Buck & Son

*Booth 23*

Featured at this exhibit will be laboratory equipment which will include high-speed and standard centrifuges, reagents, and microscopes. Other products on display will be heavy duty dog dryers, oxygen and anesthesia equipment, operating lights, autoclaves and special wrappers for goods to be autoclaved, special sanitary surface protective coatings, and liquid tile.

### Campbell X-Ray Corporation

*Booth 100*

Campbell X-Ray Corporation of Boston, Mass., will exhibit the latest model of the X-Ray Animagraph. This unit is designed for safe, exclusive, veterinary use. In one compact unit it provides a veterinarian with all his x-ray needs. The cabinet is streamlined, steel, and lead-protected for maximum protection to operators.

### Chicago Pharmacal Company

*Booth 52*

The following Chivet items will be featured: Urised, the tried and true formula which provides both a thorough antisepsis and comfortable sedation in all types of genitourinary affections of small animals; Merlenate, an effective fungicide and tineacide in ointment, powder, and solution form; and Lobascon, a tablet specifically for the relief of wheezing, asthmatic dogs and kennel cough.

### Ciba Pharmaceutical Products Inc.

*Booths 35 and 36*

Various Ciba specialties for use in small and large animal practices will be shown.

### Clinicage of Chicago

*Booth 26*

A stainless steel Clinicage mobile unit will be on display. Also featured will be stainless steel stationary units.

### Coreco Research Corp.

*Booth 33*

The Coret camera embodies the principle of electronic flash and constant automatic control of such factors as distance, aperture, field, and exposure. Now, for the first time, Coreco offers a completely automatic professional clinical camera purposely designed to achieve the ultimate in surface, intraoral, and intratubular photography. Because of the simplicity of operation, even an inexperienced doctor or nurse can achieve consistently perfect color transparencies.

### Corn Products Sales Company—Kasco Dog Food

*Booth 22*

Kasco Dog Food will be displayed in both meal and pellet form in addition to special material offered to the practicing veterinarian.

### Corn States Laboratories, Inc.

*Booth 78*

Corn States Laboratories, Inc., a subsidiary of Eli Lilly and Company, will feature a new anthelmintic of interest to both small and large animal practitioners; an improved new swine erysipelas vaccine; and the expanded Statomycin line, including a recently released convenient and economical dosage form.

### Curts Laboratories, Inc. (formerly Curts-Folse)

*Booth 8*

Dr. Curts will be in attendance at the exhibit to display and to discuss with you many new pharmaceutical preparations, as well as "old line stand-bys," compounded especially to meet the needs of the clinical practitioner of veterinary medicine.

### Delmond Pharmaceutical Corporation

*Booth 30*

We will display Spun-Gel, our brand of absorbable gelatin sponge U.S.P. Also, an ophthalmic ointment (sodium sulfaectamide); vials of Livanon,

Hepanon-B, Aminovir, water for injection, and ampules of calcium gluconate.

## Diamond Laboratories Co.

*Booths 63 and 64*

Diamond Laboratories will display a complete line of large and small animal pharmaceutical and biological products, plus a complete line of Hauptner (German) instruments. Featured will be Diamond's new Neojel, a new concentrating agent for bacterins. Neojel is now used instead of aluminum hydroxide in several bacterins for extending immunity, including erysipelas and *Leptospira pomona.*

## District Veterinary Products Company

*Booth 29*

On display will be representative products of the companies for whom we distribute. Descriptive literature of these products will also be available.

## Doho Chemical Corporation

*Booth 70*

Doho Chemical Corporation is pleased to exhibit: Auralgan for medication in otitis media and removal of cerumen; Otosmosan, an effective, nontoxic fungicidal and bactericidal agent for use in suppurative and dermatomycotic ear conditions; Rhinalgan nasal decongestant, free from systemic or circulatory effect; and new Larylgan soothing throat spray for infectious and noninfectious throat involvements. Mallon Chemical Corporation, subsidiary of the Doho Chemical Corporation, is also featuring: Rectalgan liquid topical anesthetic for relief of pain in hemorrhoids, pruritus and perineal suturing; and Dermoplast, an aerosol freon propellent spray for fast relief of surface pain, itching, burns, and abrasions.

## Drug Publications, Inc.

*Booth 72*

The new, completely written sixth edition of "The Veterinary Drug Encyclopedia and Therapeutic Index" will be on display. This edition has been enlarged to over twice the size of the original edition and contains numerous improvements and changes, including a feed additive section. We invite your inspection and suggestions.

## Eaton Laboratories

*Booth 44*

In the treatment of urinary tract infections of dogs and cats, Furadantin quickly produces high antibacterial concentrations in the urine. Canine tracheobronchitis (kennel cough), a troublesome problem in the past, is rapidly controlled by Furadantin without recurrence. For faster response in bacterial and nonspecific canine diarrheas, there is a new and better treatment—Furadex Tablets Veterinary. Furadex has also been used as an aid in controlling diarrheas associated with other diseases, such as distemper and hepatitis.

## Eisele & Company

*Booth 83*

Eisele & Co. will feature hypodermic syringes, both regular and interchangeable; and all types of veterinary syringes. Also on display will be regular clinical thermometers and special veterinary thermometers; regular hypodermic needles and special veterinary needles; and Eco bandage and specialty glassware.

### Encyclopaedia Britannica, Inc.

*Booth 34*

Encyclopaedia Britannica proudly announces the release of a brand new edition. Fourteen years of intensive editorial effort, representing an investment of more than $5,000,000, is reflected in this new edition. You are cordially invited to inspect in Booth 34 the finest Britannica ever published and to avail yourselves of the most sensational offer savings-wise ever made.

### Ethical Veterinary Supply Co.

*Booth 39*

Ethical Veterinary Supply Co. will exhibit new EVSCO pharmaceutical preparations, as well as the new EVSCO Jet Heavy-Duty Dog Dryer.

### Ford Kennel Equipment

*Booth 20*

Ford Kennels will feature their new, pure zinc sheet animal cages with cadmium-plated doors. Zinc has been found not to rust or stain, is unaffected by water or body discharges, and does not have a "tinny" sound when struck. It is pleasant to the touch and has a clean gray appearance. Also on display will be their fiberglass cages and animal fencing runs.

### Goshen Laboratories, Inc.

*Booth 5*

The products of Goshen's own manufacture will be displayed and also those of other manufacturers which are sold by Goshen on a sole agency basis.

### Fort Dodge Laboratories, Inc.

*Booths 104 and 105*

Our exhibit will feature Dictycide, a new successful treatment for lungworm infection; Promazine, an effective tranquilizing agent in both large and small animals; M-L-V, the original live virus hog cholera vaccine; Rx Soxipent, for inflammatory or infectious mastitis; and biological products for small and large animals.

### Fromm Laboratories, Inc.

*Booth 9*

Fromm Laboratories representatives will be in attendance at their display to introduce a number of new biological products, and assist the veterinarians in obtaining all information regarding the Fromm line of quality biological products.

### Hamilton Pharmacal Co., Inc.

*Booth 27*

As the result of a three-year research program, Hamilton Pharmacal Company will present several new treatments for bovine mastitis. An experienced practitioner will be available at our booth for consultation on mastitis problems.

### Haver-Lockhart Laboratories

*Booths 75, 76, and 77*

This exhibit will feature the most recent developments in diagnostic aids for both large and small animal practitioners; biological and pharmaceutical products, and instruments.

### Hill Packing Company—Hill Pet Food Division

*Booth 43*

The booth will be stocked with our regular canned products, which will consist of Hill's Dog Food, Hill's Special Pack, Hill's Puppy Food, Hill's Liver Flavored Cat Food, Hill's U.S. Inspected Chopped Cured Horsemeat, and Hill's U.S. Inspected Gravy and Horsemeat. Regular literature will be available. Throughout the convention, there will be a drawing for small dolls to persons signing their name and address on ballot slips. They will be given to participants at no charge.

### Hill Packing Company—Prescription Diets Department

*Booth 58*

Prescription Diets—scientifically designed formulas for dogs and cats available through veterinarians only: P/D for reproduction, growth, and aiding immunization; K/D for nephritic conditions; R/D for obesity correction; I/D for intestinal disorders; C/D—special diet for cats; and F/D—a uniform, biologically complete, foundation food.

### Import-Export Dr. S. Jackson, Pharmaceutical, Diagnostic, Surgical Specialties

*Booth 50*

This exhibit will feature: Coecolysin, the world's only veterinary preparation containing peristaltic hormone; Otrhomin, bactericidal, colloidal pole-reversing, antiallergic, and *gamma* globulin-increasing; Electromagnetic Metal Detector, latest model with both optical and acoustical indications; Self-Expanding Teat Dilator, not a teat plug but a surgical instrument; Vetafil, a new surgical suture every veterinarian knows about; Perlon OB Ropes, superior to chains; Perlon Tie-Down Rope; and Rumenotomy Device and Flexible Embryotome, modern instruments for the modern practitioner.

### Jensen-Salsbery Laboratories, Inc.

*Booths 15, 16, and 17*

The most recent products of our biological and pharmaceutical research programs will be featured, including effective answers to the problems of mastitis, dermatitis, stress, and feline panleukopenia. The newer and more popular surgical equipment and hospital supplies will be displayed.

### Kellogg Sales Company

*Booth 49*

The Kellogg booth will feature their high quality protein dog food—Gro-Pup Ribbon, Gro-Pup T-Bone, and Gro-Pup Meal. Literature pertaining to our products and of interest to dog owners will be distributed.

We will also distribute favors appealing to children or to parents of children.

### Key Corporation

*Booth 37*

Keybrin Tablets (Quinacrine HCl in sustained action) hold the key spotlight at our booth. Reports indicating distinct advantages in administration of Keybrin in the treatment of dogs infected with common tapeworms, and their recommended practice to replace Quinacrine, offers topics for discussion. Authors' comments on the importance of sustained action Keybrin Tablets are cited.

### Kirschner Mfg. Co.

*Booth 92*

Kirschner Manufacturing Co. invites all convention visitors to inspect the glass plastic cage, oxygen therapy door, and the complete line of fracture equipment.

### Knoll Pharmaceutical Company

*Booth 90*

Stop in and learn the new uses for old Knoll drugs, such as oral Metrazol therapy for old dogs, and become better acquainted with others that are less familiar to you. Also, look over the newer dosage forms including the sugar-coated Octin veterinary tablet and large, economy-size packages of Knoll preparations. Or, if you prefer, just stop for a visit with Angus Moore, who will represent us.

### Lea & Febiger

*Booth 28*

Lea & Febiger cordially invites you to visit their booth and examine the following books: Smith and Jones: "Veterinary Pathology"; McGrath: "Neurologic Examination of the Dog"; Miller: "Meat Hygiene"; Barger, Card, and Pomeroy: "Diseases and Parasites of Poultry"; Card: "Poultry Production"; Brumley: "Diseases of the Small Domestic Animals"; and other titles of interest to veterinarians.

### J. B. Lippincott Company

*Booth 46*

J. B. Lippincott Company presents, for your approval, a display of professional books and journals, geared to the latest and most important trends in current medicine and surgery. These publications, written and edited by men active in clinical fields and teaching, are a continuation of more than 100 years of traditionally significant publishing.

### Arthur E. Look, Inc.

*Booth 47*

Arthur E. Look, Inc., will introduce its new line of Vet-Pak Sutures. This is a new method of packaging designed for veterinary use. It is made of the highest quality surgical gut. Also on display will be many other of the company's products.

### The S. E. Massengill Company

*Booth 60*

Adrenosem, the quick-acting systemic hemostat to stop capillary bleeding and oozing, will be featured. Color transparencies vividly show the effectiveness of Adrenosem, while its rapid action is dramatized by a giant hypodermic inserted into a simulated bleeding capillary bed. When the hypodermic plunger is pushed, bleeding stops. Massengill representatives will be honored to discuss any of our products with you. Other products on display will be Daribiotic, Gallogen, and Keraspray.

### Medical-Dental Photo Co.

*Booth 96*

We specialize in close-up photographic equipment for both external and internal pictures. The equipment is available as a complete inexpensive setup, or can be attached to your own camera. Since this is our first meeting in the veterinary field, we will appreciate your visit to our booth so that we may fully acquaint ourselves with your particular problems.

### Merck & Co., Inc.

*Booth 65*

Merck professional products on exhibit will include the following: antibiotics, corticosteroids, anthelmintics, biological products, anesthetics, sulfonamides, antihistamine products, and vitamins. The Merck Veterinary Manual will also be on display.

### Miller Surgical Company

*Booth 74*

See the Miller Electro-Surgical Units and accessories, such as snares, suction-coagulation attachments, and grasping forceps. Also shown will be a complete line of diagnostic equipment consisting of illuminated otoscope, ophthalmoscope, eyespud with magnet, transillumination lamps, mirror headlight, gastroscopes, bronchoscopes, battery handle, reelacord, tubular vaginal and rectal speculum, and pyometria scope.

### Motorola Communications & Electronics, Inc.

*Booth 2*

Motorola will exhibit its new "T-Power" 2-way mobile radiophones. This equipment utilizes transistors rather than mechanical vibrators in the power supply to provide increased reliability. Standard Motorola base station equipment will also be shown, illustrating a complete two-way system for the veterinary practitioner.

### National Biological Laboratories, Inc.

*Booth 24*

National Biological Laboratories has for many years been supplying the biological needs of schools throughout the country. For the first time, they are displaying many preparations of interest to the practicing veterinarian and educator. Orders may be placed for quick delivery of animal skeletons, including skeletons of dog, cat, pig, sheep, and cow. Many other models of interest will be shown.

### National Cylinder Gas Company

*Booth 55*

This exhibit will feature resuscitation and anesthesia apparatus for animals, including the A.V.R. (Anesthetizer-Vaporizer-Resuscitator), which makes it possible for the surgeon himself to administer the anesthetic and control the respiration during surgery. Also on display will be the Handy Resuscitator, large and small animal therapy masks, and our new positive odorless deodorant.

### The National Laboratories Corporation

*Booth 81*

The National Laboratories Corporation exhibit will feature National Pharmaceutical products, Affiliated Laboratories biological products, and National Anti-Hog Cholera Serum.

### Nicholson Manufacturing, Inc.

*Booth 3*

Exhaustive tests on New Materials enables us to supply *three different types of plastics* for the construction of new kennels or the reconditioning of old ones—whether they be of wood, concrete, or metal. On display also will be our regular cataloged items including the new Trans-Jector and Incin-A-Mator.

### M. Pearlman

*Booth 25*

American-made stainless steel surgical instruments will be on display.

### Pfizer Laboratories

*Booths 40, 41, and 42*

Visit the Pfizer exhibit, featuring the latest Pfizer contributions to veterinary therapeutics including Liquamycin, Embryostat, Sterane, Tetracyn Vet Soluble Powder, Ataraxoid, and other Pfizer products. The Pfizer representative will be pleased to provide you with the most recent information on its broad line of veterinary products.

### Norden Laboratories

*Booths 102 and 103*

Eva, with millions of doses attesting to its superiority—and Iomycin, our important new antibiotic with unique affinity for respiratory and mammary tissues—will be featured at the Norden Laboratories display. We'd like to tell you about these and many other exclusives, including our sales policy—Veterinarians are our business—our only business!

### Ohio Chemical & Surgical Equipment Co.
### A Division of Air Reduction Company, Inc.

*Booth 6*

A parade of products especially engineered for use in the practice of veterinary medicine will be shown. Featured will be the new Ohio-Heidbrink® Ether-Oxygen Machine, anesthesia accessories, and inhalation anesthetic agents. In addition, a varied line of oxygen therapy and resuscitative apparatus, plus an inexpensive electrocardio-tone monitor, will be on display.

### Parke, Davis & Company

*Booth 99*

Parke, Davis & Company welcome all veterinarians to visit their booth where representatives will be available to discuss the many uses of the various forms of Chloromycetin®. Also on display will be their ultrashort-acting anesthetic Surital® Sodium, Midicel®, a new sulfonamide preparation, and Norlutin®, a potent progestational hormone.

### Pitman-Moore Company

*Booths 12, 13, and 14*

Allied Laboratories, Pitman-Moore Division, invites all of those attending the AVMA convention to visit booths 12, 13, and 14, featuring Virovax D-H, Weladol, Thorazine, and other pharmaceutical and biological products of interest to the profession. As in the past, closed circuit television receivers will be on hand for your viewing.

### Professional Veterinary Service

*Booth 89*

On display will be a complete line of oxygen and ether inhalation equipment. Also shown will be the PR-3 thoracic respirator with Burns cycling valve, a complete endotracheal catheter service, and a full line of all accessories pertinent to oxygen therapy.

### The Quaker Oats Company

*Booth 11*

Ken-L-Products Dog Foods will be displayed.

### Ralston Purina Company

*Booth 7*

This booth will depict the many types of livestock and poultry for which Ralston Purina products are produced. In attendance will be several of the company's veterinarian staff, who are regularly working in the fields of animal nutrition, farm animal diseases and problems, and in the field of feed formulation and additives.

### Randall Faichney Corporation

*Booth 91*

The Randall Faichney Corporation will present their complete line of Dura Viking, Imperial Viking, all metal and leather-packed syringes. Featured will be the new and modified Imperial-Vikomatic Syringe. Here's a new syringe offering the interchangeability of the Imperial Viking barrel and piston assembly, but with Vikomatic unit added. A full line of precision needles will also be displayed.

### Ranger Equipment Company

*Booths 18 and 19*

On display will be the latest equipment available for the restraint of large animals in foot trimming, surgery, and other operations essential in veterinary practice. Also featured will be the complete story of "Push Button Pork," as told by Ranger. Movies will be shown on all phases of Ranger chutes, livestock scales, waterers, feeders, and "Push Button Pork" equipment.

### Research Laboratories, Inc.

*Booth 45*

Research Laboratories, Inc., cordially invite you to visit their exhibit, where their representatives will welcome the opportunity to discuss with you the products offered the veterinary profession. On exhibit will be some of their pharmaceutical and biological specialties, featuring Sin-Jex, Tri-Jex, Femulgen, Erysin, Pasture Plus, and Pelzine. Literature will be available on all products.

### Sani-Cage Distributing Co.

*Booth 71*

The finest stainless steel and "Galvaneal" animal cages will be displayed. Specialty items also on exhibit will include dryers, oxygen equipment, heating pads, reel cords, and racks for drying and postoperative uses. This company is also a distributor of Cyclone and Ford fencing.

### Schering Corporation

*Booths 97 and 98*

Schering Corporation's scientific and sales personnel will be present at our exhibit to discuss the application of Schering's veterinary specialty products. The products featured will be Meticorten, Meticortelone, Meticillin, Metibiotic, Metimyd, Trilafon, Variton Compound, and Variton Cream. All guests at the convention are cordially invited to visit the Schering exhibit.

### E. R. Squibb & Sons

*Booths 86 and 87*

E. R. Squibb & Sons has long been a leader in development of new therapeutic agents for prevention and treatment of disease. The results of our diligent research are available in new products already marketed. At our booth we are pleased to present up-to-date information on these advances for your consideration.

### Suburban Surgical Supply

*Booth 88*

Our custom made stainless steel cages for your hospital are made by craftsmen who take pride in their work. Be sure to see the many features such as: round cove corners, automatic door latches, heavy gauge metal, completely insulated, and with bases for easy installation. "For those who know best."

### Sun Ray Hair Preparations Co. (Division of M. Langhaus & Son Enterprises)

*Booth 21*

Several hair clipping machines and clipper blade grinders will be displayed.

### Swift & Company

*Booth 101*

Swift & Company's booth will feature canned "Pard"; its new companion variety, "Pard with Beef Gravy Added"; and the new dry dog food taste treat, Swift's "Pard Meal—Beef Gravy Flavor." The Swift & Company representative will again accept requests for its pamphlet designed especially for the veterinarian's use, "The Care and Training of Dogs."

### United States Rubber Company

*Booth 31*

U.S. Ensolite, which is a closed cell, expanded vinyl, will be exhibited as end products for veterinary use and the protection of race and trotting horses. This material features shock absorbency and insulation. Products exhibited will include leg pads, traveling blankets, sleeping pads, stable liners, and operating pads.

### U. S. Vitamin Corporation

*Booth 67*

Methischol, complete lipotropic formula (choline, inositol, methionine, $B_{12}$, liver extracts), will be on display. Methischol is effective as an adjuvant in the treatment of infectious canine hepatitis, and specific in other liver disorders such as functional liver impairment, toxic hepatitis, liver damage due to nutritional deficiency, and in aged dogs with fatty infiltration.

### The Upjohn Company, Kalamazoo, Michigan

*Booths 93 and 94*

The Upjohn Company's exhibit is primarily institutional in design. Representatives of our sales department as well as representatives of our Veterinary Medical Department will be present to discuss Upjohn products. Literature will be available for distribution to interested veterinarians.

### Veterinary Medicine

*Booth 10*

Delegates and visitors are cordially invited to booth 10 to examine recent issues of *Veterinary Medicine* and new textbooks of interest to veterinarians. An attendant will be present to answer questions concerning subscriptions during all sessions.

### Vitamineral Products Co.

*Booth 1*

This display will present material describing VpC's Vitamin and Mineral Supplements, its popular feed books, and recent issues of the *Vitamineral* News. Facilities for the speedy solution of common nutritional deficiency problems, plus the selection of the VpC product of choice, will also be demonstrated.

### Wyeth Incorporated

*Booth 69*

Wyeth will feature: Injection Bicillin Fortified (benzathine penicillin G and procaine penicillin G in aqueous suspension, Wyeth) for fast, effective treatment of pneumonia, shipping fever, erysipelas, respiratory infections and other penicillin-susceptible organisms. Sparine Hydrochloride (promazine hydrochloride, Wyeth), for immediate "chemical restraint," achieves cooperation, preoperative calming, and facilitation of anesthesia. Equanil (meprobamate, Wyeth) relieves hyperexcitability, hysteria, nervousness and viciousness in small animals.

### Wynkoop Horn Saw Company

*Booth 95*

This exhibit will feature the Kyne-Saw, an electric dehorning saw, and Kyne-Snap, a new quick-release nose snap. A film will be shown demonstrating a new wound dressing and its application following dehorning.

### Warner-Chilcott Laboratories

*Booth 73*

Warner-Chilcott Laboratories will exhibit specialties of interest to the veterinary profession: Anabolin (metabolic regulator), balanced combination of three hormones acting synergistically to reverse catabolic effects; Triocil (synthetic chemotherapeutic agent), available as an ointment, therapeutic shampoo and spray—wide spectrum, no development of resistant organisms; and Tedrene, for symptomatic relief of kennel cough and asthmatic dogs.

### The Warren-Teed Products Company

*Booth 51*

An expanding service to the graduate licensed veterinarian—exclusively—keynotes Warren-Teed's specialty product offerings to you. Featured products include the outstanding hemostatic agent, Klot; a multipurpose skin preparation, Polyderm; and a powerful, unique formula for the treatment of otic infections, Tympacaine.

### The Williams & Wilkins Co.

*Booth 57*

The Williams & Wilkins Company has perhaps the most comprehensive line of books in the field of veterinary medicine of any publisher in the United States. They represent a number of British publishers in addition to publishing a number of American books in this field.

### Wilson & Co., Inc.

*Booth 59*

Wilson & Co. will display Ideal and 4-Paw Dog Foods. Ideal is a complete ration certified by the U.S. Government. 4-Paw Dog Food contains 96 per cent meat by-products; 21 per cent protein, 7 per cent fat, and 65 per cent moisture. Mix with dry dog food. 4-Paw is high in food value, low in cost; superior in feeding qualities to that of horsemeat.

### Winthrop Laboratories

*Booth 66*

Winthrop Laboratories will feature two of its more recent introductions, *i.e.* Alevaire for aerosol use in respiratory infections; and Hypaque, a contrast medium for intravenous urography and for angiocardiography. Other outstanding synthetic pharmaceuticals such as Phisohex, Nemural, Demerol, Fuadin, Pentobrocanal, Roccal, and Aricyl will be on display.

# Dirofilariasis in Sentry Dogs of the Pacific Air Forces

Major ROBERT W. BAILEY, V.C., U.S.A.F.

*Tachikawa Air Base, Japan*

THE PACIFIC Air Forces Sentry Dog Training Center was established at Showa Air Station, near Tokyo, Japan, in April, 1952. Fifty German Shepherd dogs were purchased in Tokyo from the Nippon Police Dog Association and brought to Showa as the first training class. The Center has continued training both dogs and their handlers, having acquired and trained over 700 such animals, as of March 1, 1958.

Sentry dogs trained by this Center are an integral and important part of the security of U.S.A.F. bases throughout Pacific Air Forces, as well as certain U.S. Army and U.S. Navy installations in the Far East.

The use of these animals not only enhances security measures at sensitive defense points, but protects against loss of government property. One such dog and his handler can more effectively cover a given area than can three human sentries working alone.

Dogs have alerted their handlers to the presence of trespassers at distances of up to 500 yards, have proceeded unerringly to the person suspected, and have been most effective in their apprehension, with minimum or no hazard to the handler. There is little possibility of a human sentry accompanied by a sentry dog being overcome by surprise, making the use of these animals particularly appropriate in maximum security areas.

In keeping with the U.S. Air Force policy of "more Air Force per dollar," proponents of the sentry dog declare that it costs less than $1.00 a day to maintain 1 of these animals—yet a sentry dog's normal tour of duty is 12 hours a night, seven nights a week (working with two handlers).

## THE PROBLEM OF CANINE HEARTWORM

Almost from the beginning of this program, a condition which caused debility, lost time, and the deaths of many dogs was recognized. Available records indicate that approximately 50 per cent of the deaths and over 80 per cent of the lost time can be attributed more or less directly to conditions which arise from infection with *Dirofilaria immitis*, the canine heartworm.

The adult female measures 20 to 30 cm. in length by 1 mm. in width, while the male is 12 to 18 cm. by 1 mm.[9] These parasites are generally found in a mass in the right ventricle of the heart, but also in the right atrium, pulmonary artery, and both venae cavae. These lead to circulatory interference of variable degree (depending upon the extent of the infection) and account for the cardinal sign of heartworm infection in working dogs—loss of stamina.[3]

At necropsy of dogs with heavy infections, the following are frequently found: hypertrophied and flaccid right ventricular musculature; fibrous thickening of various parts of the endocardium which may have been irritated by worm masses; and sclerosis and intimal "pebbling"[2,4] of the pulmonary artery, sometimes extending into the right and left branches.

While performing necropsies at one of the Tokyo dog pounds, I have often noticed a peculiar gelatinous thrombus associated with the worm mass in untreated dogs. Two untreated sentry dogs which died suddenly were also found to have large pulmonary arterial thrombi associated with a worm mass which almost completely occluded the pulmonary artery—death apparently resulting from fragmentation of the thrombus and formation of massive infarcts.

Briefly, the life cycle of this parasite is as follows: The unsheathed microfilariae are released from the vulva of the female to swim through the blood and, thereafter, may be found throughout the body of the dog. Any one of several varieties of mosquitoes ingest the microfilariae upon sucking the blood of an infected dog. From the gut, the larvae migrate through the tissues of the insect vector and, in 11 or 12 days, develop into a stage capable of reinfecting a dog.

The infective larvae, while continuing their growth, are transmitted via the bite of an infected mosquito to a dog and proceed to the subcutaneous tissue, subserosa, muscles, or adipose tissue, which are their intermediate habitat. Development is complete in 85 to 120 days after infection, at the end of which time the young adults arrive in the right ventricle of the heart.

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Major Bailey is chief, Veterinary Services, 6407th U.S.A.F. Hospital, APO 323, San Francisco, Calif.

The author thanks Capt. Gerald S. Spear for his technical assistance.

They reach sexual maturity approximately two months later.[3,5,9]

This disease is principally mosquito-borne and its effects are more noticeable in working animals. These are epidemiological features which make the disease peculiarly important to the procurement and utilization of sentry dogs. Surveys of impounded animals and examinations of prospective sentry dogs have established that there is high incidence of the disease in the Tokyo area. Of 77 dogs recently offered for purchase, 65 were found, by the direct smear method alone, to harbor microfilariae. Of the 50 dogs purchased at this time, 46 were bought as known infected animals, as will be explained later.

After the threat to the program was appraised, several methods were used in an attempt to control the effects of this disease. One was to purchase only microfilariae-free dogs, which required that dogs be procured only on Hokkaido, the northernmost Japanese island.

Following this step, "operation heartworm" was started, including the semi-annual blood testing of sentry dogs for microfilariae and the establishment of criteria for treatment. Another method was the surgical removal of heartworms. The latter did not prove to be practical, although it may be useful in the treatment of selected, privately owned animals.[8]

As a result of an evaluation at the Center in 1953 to 1954, and prior observations,[2,6] as to the efficacy of the Japanese arsenical preparation, dichlorophenarsine hydrochloride (Filarsen*), this drug was used in selected dogs with heartworm infection.

Since this preparation had been established as an effective filaricide at the concentration of arsenic administered (1 mg./kg. of body wt. for 3 daily doses), the risk of loss of dogs because of pulmonary thrombosis, embolism, and shock was considered too great for its general use. Accordingly, only about 50 seemingly lightly or recently infected dogs were treated with this compound between March, 1954, and August, 1956.

## EXPERIMENTAL TREATMENT

In August, 1956, it was decided that all known infected dogs would be treated with a filaricidal arsenical, since it seemed better to identify and eliminate from the program animals with heavy infections, because of their lack of stamina.

From Aug. 1, 1956, to March 1, 1958, a total of 403 sentry dogs in Pacific Air Forces were treated with arsenical preparations (0.75 mg. As/kg. for 2 or 3 days). Of these dogs, 221 were treated by me, and the balance at Far East air bases which use sentry dogs. An additional 80 known infected dogs, used as subjects in a comparison study to be reported,[1] were similarly treated and observed.

Of 403 dogs on which records were maintained (research animals not included), 20 were lost for various reasons following treatment: 3 with extensive tissue necrosis caused by accidental perivascular administration of the arsenical; 9 whose clinical condition either did not improve or became worse following treatment; 2 apparently from arsenic poisoning; 5 with complications resulting from extensive pulmonary arterial embolism; and 1 of unknown causes.

This loss (4.9%) was more than compensated for by the general gains in vigor, stamina, and condition of the surviving dogs. This statistic is unfavorably weighted, however, by the inclusion of the obviously heavily-infected dogs in this series. Such animals, though they were poor risks, were treated because of the possibility of improvement and return to active duty. This did occur in several of such dogs.

Adult *D. immitis* are readily killed by the above concentration of arsenic and pass into the pulmonary arterial tree where they block circulation and cause infarctions. Unless the infection is massive, pulmonary arterial circulation is generally not sufficiently impaired to incapacitate the animal. This has also been observed by other workers.[2]

Depending upon whether the infection was mild, moderate, or heavy, the course following such treatment was variable. In dogs with mild infections, there may be little or no clinical evidence of pulmonary arterial obstruction.

*Treatment of Moderately Infected Dogs.*—In dogs with moderate infections, which have formed the bulk of the cases which the author has observed, there is usually a febrile response beginning in about six days, characterized by rectal temperatures

*Produced by Fujita Seiyaku K. K., Shinagawa-ku, Tokyo, Japan.

of 102.5 to 104.0 F. This is generally accompanied by anorexia, depression, occasional coughing, and some râles, frequently lasting a week or ten days.

Upon recovery, usually evident during the third week following treatment, a general improvement in condition is almost always mentioned by handlers, based on increased stamina and vigor, improved coat, and gains in weight. Treatment with broad-spectrum antibiotics during the febrile period markedly shortens the course and enhances recovery. Parenteral fluids and forced feeding, when required, also improve the prognosis.

Tissue studies on experimental animals indicate that several recuperative processes occur, including recanalization of the arterial thrombi, calcification or absorption of the dead worms, and organization of the infarcted areas.

*Treatment of Heavily-Infected Dogs.*—In dogs with heavy worm burdens, there was less opportunity for successful treatment, although it was worth the risk. Some animals died suddenly following treatment with arsenicals, and large worm masses generally were found in the right side of the heart and pulmonary arteries. These dogs showed signs of collapse, depression, epistaxis, dyspnea, cyanosis, areas of dullness on thoracic auscultation, and tachycardia.

Some animals, if carefully treated, will recover although the course is generally prolonged. Many dogs which survive this circulatory insult show no improvement in clinical condition because of chronic changes. They continue to have hypertrophy and dilatation of the right ventricle; vegetations obstructing the right atrioventricular valve; pulmonary arterial sclerosis; chronic passive hepatic congestion; and chronic renal malfunction.

These changes, if not too advanced, could possibly be controlled so as to prolong the life and comfort of a pet animal, but it is impractical to attempt such treatment with most working dogs.

Some dogs died as a result of an apparently acute arsenical poisoning, although tissue studies on experimental animals[1,2] have indicated that the dosage levels of arsenic which were used are usually well tolerated.

The chronic passive congestion of the liver, usually found associated with heavy infections, may lower arsenic tolerance by virtue of impaired hepatic function.[7] For this reason, animals which have recovered from various liver diseases or with impaired renal function should be evaluated carefully before treatment with arsenical preparations.

## CURRENT CONTROL PROGRAM

Currently, the control program for dirofilariasis in Pacific Air Forces sentry dogs has the following features:

1) All dogs known to be infected, including animals previously treated with piperazine or antimonial compounds, are identified and treated with a filaricidal arsenic compound. These animals are known to harbor living adult worms, since such compounds apparently kill only the microfilariae. (This program is almost complete, with results as described above.)

2) All sentry dogs are treated annually with a "prophylactic" dosage of an arsenic compound. This will consist of two doses of the drug given intravenously on consecutive days (0.75 mg. of As/kg./day). A comparison study of various American arsenical preparations has been undertaken[1] and it appears that a dosage of 0.75 mg. of As/kg. for two days is just as effective as 0.75 mg. of As/kg. for three days. Also, it would seem that the American drugs tested compare favorably with the Japanese drug.

It is recommended, based upon experience in Japan,[7] that in this climate these doses be given annually, in January through April. When the duration of the mosquito season and the 85 to 120 days required for the entry into the heart of the intermediate forms of the worm are considered, it is estimated that the last possible young adult will appear in the heart about the first of the year. If such dogs are treated annually between January and April, only an occasional one will have a heavy infection. A semiannual treatment might be required in tropical regions where there is continuous mosquito exposure.

3) Procurement and immediate treatment of young, vigorous dogs in the Tokyo area is recommended even though this area is known to be enzootic for the disease. (So many difficulties were attendant upon the program which restricted procurement to dogs from Hokkaido that it was abandoned.)

Of 50 dogs recently acquired in the Tokyo area, 45 have been treated successfully with an arsenical filaricide for dirofilariasis, with only one death. (Only 2 of the remaining 49 have proved temperamentally incapable of becoming suitable sentry dogs, as compared with more than 50% of the previous lot of dogs procured in Hokkaido, which have been released from service for various physical and training disqualifications.)

4) The semiannual testing of all animals for microfilariae has been abandoned because, with the treatment program, it was pointless except for epidemiological studies. Arsenical preparations do not kill microfilariae, and animals rid of their adult worm burden by an arsenical compound may still have live microfilariae in their circulation for nine months or more. Therefore, annual administration of a microfilaricidal drug has been instituted as a means of reducing the spread of the disease within a given kennel and the autoreinfection of individual animals. Diethylcarbamazine (Caricide*), 10 mg./lb., three times a day for three days, is used for this purpose.

SUMMARY

Sentry dogs play an integral and important role in the security of American bases in the Far East. In order to keep these animals healthy and strong and to prevent death losses in areas enzootic for canine dirofilariasis, it has been necessary to start a control program against infection with *Dirofilaria immitis*.

This has consisted of identification and treatment of all infected animals with arsenical drugs which kill adult *D. immitis;* annual prophylactic treatment of all dogs with both filaricidal and microfilaricidal drugs; and the immediate treatment for both microfilariae and adult worms of all locally procured replacements. Effective level of arsenic dosage has been 0.75 mg. of As per kilogram of body weight, daily for two days.

Of 403 dogs on which records were kept, 20 (4.9%) died from causes probably associated with therapy. However, the improved condition of the survivors more than compensated for the loss.

*Produced by Lederle Laboratories, Division of American Cyanamid Co., New York, N.Y.

References

[1]Bailey, R.: A Comparison Study of Various Arsenical Preparations as Filaricides of *Dirofilaria Immitis*. Unpublished data, 1958.

[2]Balch, R., Fonseca, J., Rice, W., and Leach, B.: Canine Filariasis in the Far East. J.A.V.M.A., *131*, (Sept. 15, 1957): 298-301.

[3]Clayton, F. W.: Canine Heartworm (*Dirofilaria Immitis*). Master's thesis, Dept. of Trop. Med. and Pub. Health, Div. of Grad. Med., School of Medicine, Tulane University, New Orleans, La., 1955.

[4]Hennigar, G., and Ferguson, R.: Pulmonary Vascular Sclerosis as a Result of *Dirofilaria Immitis* Infection in Dogs. J.A.V.M.A., *131*, (Oct. 1, 1957): 336-340.

[5]Kume, S., and Itagaki, S.: Observations on the Life Cycle of *Dirofilaria Immitis* in the Dog as Final Host. Japan J. Vet. Sci., *11*, (1949): 1-2.

[6]Kume, S., and Ohishi, I.: Adult Filaricidal Effect of an Arsenical (Dichlorophenarsin Hydrochloride) J. Japan Vet. Med. Assoc., *5*, (1952): 358-361 (in Japanese).

[7]Kume, S., and Ohishi, I.: Observations of the Chemotherapy of Canine Heartworm Infection with Arsenicals. J.A.V.M.A., *131*, (Nov. 15, 1957): 476-480.

[8]Kurokawa, K.: Surgical Treatment of Canine Cardio-Filariasis; Summary of the Surgical Treatment (No. 8 of a series). Bull., Nippon Vet. and Zootech. Coll., *6*, (1957): 37-42 (in Japanese with English summary).

[9]Morgan, B. B., and Hawkins, P. A.: Veterinary Helminthology. Burgess Publishing Co., Minneapolis, Minn., 1949.

## Predicting Age for Vaccinating Pups for Distemper

Most pups 1 week old or more, with a serum titer of less than 20, responded to virulent distemper virus by dying or developing immunity. If their titer was above 30, they were immune. Their titer was proportional to that of the mother; before nursing, it was 3 per cent of the mother's serum titer and after a meal of colostrum, it was about 77 per cent of the colostral titer, which varied with the dams' serum titer.

The colostral titer fell markedly two days after whelping. Since the titer acquired by the pups gradually declined, the age at which pups would be susceptible and could be immunized could be predicted on the basis of the dams' serum titer.—*J. H. Gillespie et al. in Cornell Vet. (April, 1958): 103.*

*Induced Toxoplasmosis in Dogs.*—Twenty-one dogs, age 9 days to over 2 years, were each given 90 million to 1 billion *Toxoplasma gondii, per os.* Of the 21, 5, age 12 days to 6 months, became infected.—*Arch. Inst. Pasteur d'Algérie, 35, (1957): 368.*

# A Comparison Study of Various Arsenical Preparations as Filaricides of *Dirofilaria Immitis*

Major ROBERT W. BAILEY, V.C., U.S.A.F.

*Tachikawa Air Base, Japan*

THE USE of sentry dogs as a means of providing protection for vulnerable installations in all parts of the world has been gaining favor with U.S. Air Force authorities at a remarkable rate. Utilization of these animals for security purposes is so economical and effective that the changing character of our defense structure indicates a probable increasing use of these dogs.

In many areas where these dogs are used, however, canine dirofilariasis is enzootic and is an important cause of disability and death. Fortunately, there are indications that the use of arsenical filaricides for *Dirofilaria immitis* can control this disease in dogs.[1,12]

Early laboratory findings,[10] followed by extensive clinical trials[4] and reports of practitioners,[11] all indicated that certain organic arsenicals are effective against the adult parasites when administered intravenously.

It was, therefore, recommended by several manufacturers of such compounds that the treatment for canine dirofilariasis consist of 15 consecutive daily injections of a 1 per cent solution, 0.1 cc. per pound of body weight. Since these compounds contain 18 per cent arsenic, this would be 0.18 mg. of As/lb., daily, or 2.7 mg. of As/lb., total dose. In standard terms, this is a daily dose of 0.396 mg. of As per kilogram of body weight, or a total dose of 5.94 mg. of As/kg. in 15 days.

An extensive study was made in Japan on the use of organic arsenicals in the treatment of canine dirofilariasis.[6] Further experimental studies at the Pacific Air Force Sentry Dog Training Center indicated that three consecutive daily doses of dichlorophenarsine hydrochloride (Filarsen*) at the level of 1.0 mg. of As/kg. was markedly effective against adult *D. immitis* in infected animals.[2]

Since there were few or no indications of arsenic toxicosis at these levels, it was decided that this shorter course of treatment might more conveniently fit into the sentry dog medical program than would a 15-day series.

Accordingly, large numbers of sentry dogs in Pacific Air Forces were treated with several organic arsenical compounds (principally dichlorophenarsine HCl), using the following treatment schedules: (*a*) 1.0 mg. of As/kg. for three consecutive days; (*b*) 0.75 mg. of As/kg. for three consecutive days; and (*c*) 0.75 mg. of As/kg. for two consecutive days.

Most of the infected dogs thus treated had clinical responses which indicated fairly uniform drug activity. A series of 403 such dogs showed generally improved clinical conditions following such treatment, with 4.9 per cent loss.[1]

The comparative ease and convenience of treating infected animals with two or three, instead of 15, consecutive daily doses raised the question as to whether other preparations might behave similarly, as indicated by previous studies. Therefore, a large series of infected dogs were treated under carefully controlled conditions.

## MATERIALS AND METHODS

Surveys of impounded animals and experience in the examination of prospective sentry dogs had established that the area in and around Tokyo, Japan, is one of high incidence for canine dirofilariasis. Therefore, more than 80 mongrel dogs, weighing on the average 12 kg, were obtained from a dog pound in Setagaya-ku, Tokyo, during the period June, 1957, through February, 1958, and used in this comparison test. Two infected sentry dogs, no longer fit for duty, were also used.

An attempt was made to select dogs from 2 to 5 years old. Dogs with diseases or physical conditions which could affect the validity of the test were rejected. The dogs used were tested for microfilariae by examination of a blood film except during the cold months, since microfilarial motility

Major Bailey is chief, Veterinary Services, 6407th U.S.A.F. Hospital, APO 323, San Francisco, Calif.

This project was a research task of the U.S. Air Force School of Aviation Medicine, Air University, Randolph AFB, Texas.

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*Produced by Fujita Seiyaku K. K. Shinagawa-ku, Tokyo, Japan.

was markedly inhibited by low temperatures. The concentration technique of Knott[5] proved more effective during these months.

The selected dogs were brought to the Pacific Air Forces Sentry Dog Training Center and housed in portable-type kennels, well separated from any sentry dog activity. They were allowed a week or more to rest and to adjust to a new environment. Those with clinical signs of intestinal parasitism were appropriately treated, but were otherwise not disturbed.

Following this period, the animals were treated according to a previously determined schedule and their reactions were observed. Each compound tested was administered to two groups of 10 dogs as follows: Groups A, C, E, and G were given 0.75 mg. of As/kg. for three days, a total dose of 2.25 mg. of As/kg. Groups B, D, F, and H were given 0.75 mg. of As/kg. for two days, a total dose of 1.50 mg. of As/kg.

Twenty-one days following the initial dose, the animals were euthanatized with an overdose of a barbiturate and necropsied. Tissue samples of the liver, kidney, adrenal gland, spleen, heart, and lung from the 40 animals which had been given total doses of 2.25 mg. of As/kg. were submitted to a laboratory for microscopic examination.** A thorough search of the pulmonary arterial circulation of each dog was made for the dead adult *D. immitis*. There was usually no doubt as to whether a parasite was dead or alive, because of advanced degenerative changes. When there was a question, the worm was placed in warm lactated Ringer's solution and observed for motility.

Some animals which were positive for microfilariae had no adults in the pulmonary circulation, raising the question of the occurrence of another filarial parasite.[9] These animals were replaced in their series with other infected dogs, and the test was repeated. No observations were made as to the possible microfilaricidal effect of the drugs, since it had been previously established that organic arsenicals have little effect upon microfilariae.

The American compounds tested included oxophenarsine hydrochloride (Mapharsen†), usually used as a human antiluetic and not normally used in the treatment of dirofilariasis; arsenamide (No. 1) (Caparsolate†), and arsenamide (No. 2) (Filcide†). The first drug was included in the test to establish the point that organic arsenicals, administered intravenously at optimum dosage levels, have comparable filaricidal effects. The latter two drugs were given at the rate of 0.2 cc./lb., which slightly exceeds the basic dosage of 0.75 mg. of As/kg., delivering instead 0.792 mg. of As/kg.

**Pathology Laboratory, 6407th U.S.A.F. Hospital, APO 323, San Francisco, Calif.

†Mapharsen is produced by Parke-Davis & Co., Detroit, Mich.; Caparsolate by Abbott Laboratories, Inc., North Chicago, Ill.; and Filcide by Pitman-Moore Co., Division of Allied Laboratories, Indianapolis, Ind.

## RESULTS

The filaricidal effects of the four drugs are compared (tables 1, 2). Each series consisted of 10 dogs.

*Clinical Observations.*—Few of the 80 dogs tested exhibited any clinical indications of arsenic toxicosis other than nausea, vomiting, and defecation following some of the injections. There were 25 (50%) episodes of vomiting following the injections of oxophenarsine HCl and 13 (26%) such episodes following the injections of dichlorophenarsine HCl, but none with the other two compounds.

TABLE 1—The Effect of a Total Dose of 2.25 mg. of As Per Kilogram of Body Weight (0.75 mg. As/kg. for 3 days)

| Series | Compound | Dead worms | Live worms | Killed (%) |
|---|---|---|---|---|
| A | Oxophenarsine HCl | 155 | 6 | 96.4 |
| C | Arsenamide (No. 1) | 167 | 3 | 98.3 |
| E | Arsenamide (No. 2) | 132 | 0 | 100.0 |
| G | Dichlorophenarsine HCl | 77 | 13 | 85.6 |

None of the animals exhibited icterus, although 2 dogs given oxophenarsine HCl did display prolonged inappetence, which was probably related to certain liver and kidney changes found at necropsy. Many of the animals had transient periods wherein there was coughing, depression, and occasional epistaxis. These were related to extensive lung damage observed and were, in general, seen in dogs which harbored the heaviest heartworm infections.

TABLE 2—The Effect of a Total Dose of 1.50 mg. of As Per Kilogram of Body Weight (0.75 mg. As/kg. for 2 days)

| Series | Compound | Dead worms | Live worms | Killed (%) |
|---|---|---|---|---|
| B | Oxophenarsine HCl | 106 | 3 | 97.2 |
| D | Arsenamide (No. 1) | 91 | 0 | 100.0 |
| F | Arsenamide (No. 2) | 250 | 9 | 96.4 |
| H | Dichlorophenarsine HCl | 68 | 1 | 98.5 |

Apparently normal, full-term pups were whelped by 1 bitch 14 days, and by another bitch, eight days after the first dose. Two other females were found, at necropsy, to be pregnant approximately 42 and 50 days, respectively. These fetuses appeared normal, and microscopic examination of placental areas revealed no abnormality.

One dog died of extensive pulmonary arterial thrombosis with infarction on the eighteenth day following the first injection. Most of the other animals were in improved clinical condition at the end of 21 days.

*Gross Pathology.*—Pulmonary arterial thrombosis with infarcts was observed at necropsy in almost all cases. Three dogs treated with oxophenarsine HCl showed varying degrees of inflammatory changes of the liver; in 2 of them it could be related to some pretreatment cause.

Moderately acute kidney changes were observed in 3 animals, 1 with each treatment except dichlorophenarsine HCl. One dog had a recent splenic infarct, but this could not be associated with the treatment.

Considering the probable pretreatment history of these animals, it is remarkable that most of them appeared to be in relatively good condition at necropsy.

*Microscopic Findings.*—Tissues were submitted for microscopic examination from only 40 of the test animals, *i.e.*, those which received the heaviest total doses of 2.25 mg. of As/kg. Tissues from dogs treated with oxophenarsine HCl showed relatively uniform changes in the liver and kidney, although varying in intensity. The most common finding was subacute portal inflammation in the liver and focal interstitial subacute inflammation of the kidney. Necrosis and severe inflammation in both these organs was observed in several specimens.

In 2 dogs treated with arsenamide (No. 1), there was a slight chronic hepatic congestion, and in 2 others a slight subacute periportal inflammation. Five of the animals treated with this drug were found to have slight focal chronic interstitial inflammation in the kidneys, all associated with the presence of microfilariae.

In 6 of the 10 dogs treated with arsenamide (No. 2), there was a subacute portal inflammation associated with microfilariae, and in 1 a chronic passive congestion of the liver. The kidneys of 2 dogs treated with this drug were found to have focal scarring, 1 had necrosis of the loops of Henle, and 4 had a slight focal subacute interstitial inflammation associated with microfilariae.

Of the 10 dogs treated with dichlorophenarsine HCl, 9 had varying degrees of subacute periportal inflammation, although none of the changes were severe. In 4 of the 10 dogs, there was an interstitial inflammation of the kidneys, varying from chronic to subacute; 1 had a focal chronic pyelitis; and another had a necrosis of the loops of Henle. Again, all of the kidney changes appeared to be associated with microfilariae.

In all specimens submitted there were infarcts and organized arterial thrombi in the lungs, many associated with degenerated adult *D. immitis*. Many of these arterial thrombi showed evidence of beginning recanalization and aggregation of polymorphonuclear leukocytes, indicating the rapid repair processes which can be expected.

In only a few instances were the liver and kidney changes severe, and it would be difficult in all cases to attribute the damage directly to the arsenical compound used. One can only conjecture upon the role of microfilariae in these changes. Further, limited surveys have indicated that there is a relatively high incidence of canine leptospirosis in Japan, and it is suggested that perhaps some of the chronic and subacute changes could have been initiated by this cause.

## DISCUSSION

There are advantages in the use of an effective heartworm treatment that requires only two or three, instead of 15, daily injections, particularly where annual treatment is required. It not only saves effort, but it lessens, or eliminates, the cumulative effects of arsenic administration. There is also less opportunity for accidental perivascular administration of these extremely irritating materials.

The toxicity of these compounds, at the dosage levels used in this series, does not seem to be important. However, animals which have liver or kidney dysfunction may develop acute arsenic poisoning.[1] It is, therefore, recommended that a thorough evaluation of liver and kidney function be made before initiating treatment with arsenicals. In view of this, it is remarkable that none of the animals in this rather large series exhibited any evidence of acute poisoning. The dogs had been selected at random and are certain to have had variable medical histories.

The apparent ambiguity in the results from the use of dichlorophenarsine HCl might be due, in part, to the large numbers of immature worms found at the conclusion of series G. It is suggested that these young worms may have more resistance to the action of arsenicals than do the more mature forms.

SUMMARY

Eighty dogs infected with *Dirofilaria immitis* were treated intravenously with various organic arsenical compounds to compare their effectiveness at two dosage levels. The drugs which were used included: oxophenarsine hydrochloride (Mapharsen); arsenamide (No. 1) (Caparsolate); arsenamide (No. 2) (Filcide); and dichlorophenarsine hydrochloride (Filarsen).

The drugs were given to all dogs at the rate of 0.75 mg. of As per kilogram of body weight, but 40 were treated for three days and 40 for two days. These dosages of all of the drugs tested appeared to be equally effective in destroying adult *D. immitis*, and there was little evidence of arsenic toxicosis. Over 95 per cent of the adult worms were killed in 21 days by both dosage levels.

References

[1]Bailey, R.: Dirofilariasis in Sentry Dogs of the Pacific Air Forces. J.A.V.M.A., *133*, (July 1, 1958): 48-51.

[2]Balch, R., Fonseca, J., Rice, W., and Leach, B.: Canine Filariasis in the Far East. J.A.V.M.A., *131*, (Sept. 15, 1957): 298-301.

[3]Drudge, J.: Arsenamide in the Treatment of Canine Filariasis. Am. J. Vet. Res., *13*, (1952): 220-235.

[4]Jackson, R.: The Treatment of Heartworm-Infected Dogs with Arsenamide, a Phenyl Arsenoxide. J.A.V.M.A., *115*, (July, 1949): 17-22.

[5]Knott, J.: A Method for Making Microfilarial Surveys on Dog Blood. Tr. Roy. Soc. Trop. Med. & Hyg., *33*, (1939): 191-196.

[6]Kume, S.: Chemotherapy of Canine Filariasis. Am. J. Vet. Res., *69*, (1957): 912-923.

[7]Kume, S., and Ohishi, I.: Observations on the Chemotherapy of Canine Heartworm Infection with Arsenicals. J.A.V.M.A., *131*, (Nov. 15, 1957): 476-480.

[8]Kume, S. Tokyo University of Agriculture and Technology, Tokyo, Japan: Personal communication, 1957.

[9]Newton, W., and Wright, W.: The Occurrence of a Dog Filarid Other than *Dirofilaria Immitis* in the United States. J. Parasitol., *42*, (1956): 246-258.

[10]Otto, G., and Maren, T.: Possible Use of an Arsenical Compound in the Treatment of Heartworm in Dogs. Vet. Med., *42*, (1947): 128.

[11]Panel (C. B. Dibbel, R. F. Minnick, K. Owens, R. F. Jackson, and J. H. Yarborough): Heartworms. Proc. Book, AVMA (1950): 235-238.

[12]Werntz, O., Hq., 2nd Air Force, Barksdale AFB, La.: Personal communication, 1957.

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*Blood Values in Dogs at High Altitudes.* —Studies on 20 apparently healthy dogs, living at altitudes of 12,000 to 14,000 ft., showed a marked increase in erythrocyte count and in hemoglobin and hematocrit values compared with dogs at sea levels. The sedimentation rate and leukocyte count were decreased but there was a noticeable increase in percentage of neutrophils, monocytes, and lymphocytes.—*Ganaderia Andina (July, 1957): 22.*

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## Raising Orphaned Pups

The heat-regulating mechanism in newborn pups is poorly developed and the mortality in those which become chilled is high. During the first week of life, pups should be maintained at a temperature of 85 to 90 F. This can be decreased to 80 F. by the seventh to tenth day, and to 75 F. by the end of the fourth week.

The milk of the bitch has higher calorie, fat, protein, and mineral levels and less lactose than that of the cow. For pups, cow's milk should be modified by adding fat and protein, e.g., 1 to 2 raw egg yolks per 8 oz. of milk. A commercially prepared substitute (Esbilac, Borden Co., New York) is available. Each pup should be fed 60 calories per pound of body weight during the first week, 70 calories/lb. during the second week, and 80 to 90 calories/lb. during the third week. Up to 3 weeks of age, the pup should be fed three times a day at eight-hour intervals, twice daily from 3 to 8 weeks of age, and once daily thereafter. It should be weaned from the bottle when 3 weeks old and fed a pablum formula to which is added increasing amounts of dog food with a high meat content.

For the first few days of life, it is necessary to stimulate defecation and urination after each feeding by gentle massage of the external genitalia and anus with cotton dipped in warm water. Except for gentle massage of the sides and backs of the pups before they are fed, they should not be handled.—*Dudley Baker in Pure-Bred Dogs (April, 1958): 9.*

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## Canine Virus Hepatitis in Pups

Most studies of canine virus hepatitis have been with adult dogs — this reports a study of the disease in pups.

Ten Greyhound pups from a serologically-negative bitch were isolated from her immediately at birth. Newborn pups are said to be almost poikilothermic and their temperatures declined 26 to 27 degrees, but in 25 hours were back up to 90 F., and in 48 hours were 100 to 102 F. All 10 were in good condition when they were

inoculated intraperitoneally with canine hepatitis virus the day after birth. The 5 pups with the lowest postnatal temperatures (68 to 73 F.) died within three days. Of the other 5 (82.9 to 73.9 F.), 3 died of the disease in three, four, and ten days, and 2 survived. At weaning age, no complement-fixing antibody was detected in the blood of the 2 which survived. Two months later, they were inoculated intraperitoneally with canine hepatitis virus and in three days developed temperatures of 103.5 to 104.6 F. After five days of illness they recovered completely, and two weeks later they had a good serum antibody titer.

This experiment indicates that 1-day-old pups are susceptible to canine hepatitis virus and that those with the greatest postnatal temperature drop are least resistant. Also, that not all pups take the disease even though exposed by contact or intraperitoneal inoculations, yet they are not immune to challenge later.

Intranuclear inclusion bodies, usually found in the liver, and complement-fixing antigen characteristic of the fatal form in adult dogs, are undetectable in the majority of the sucklings pups. Histopathological features of sections of livers from pups and from adult dogs were somewhat similar, except for the absence of the intranuclear inclusion bodies in pups. These specific histopathological lesions have been occasionally found in pups which died soon after birth, indicating that intrauterine infection had occurred.—*Brit. Vet. J. (March, 1958): 112.*

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*Canine Diseases in France.*—Approximately 25 per cent of dogs, in France, are infected during their life with Rubarth virus (infectious hepatitis). The incidence is four times greater in free dogs than in isolated pets.

Serological studies indicate that 50 per cent of the dogs have been infected with leptospirosis at some time, with *Leptospira icterohaemorrhagiae* most frequently involved.—*Bull. Acad. Vét. France (Oct., 1957): 422, 426.*

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*Cerebral Toxoplasmosis in a Cat.*—In July, 1957, a cat suddenly attacked a person violently. Rabies was suspected and the cat was killed, but brain section showed no lesions of any virus disease. It showed typical toxoplasmosis. The diagnosis was feline dementia due to parasitic toxoplasmic encephalitis.—*Rec. méd. vét. (Jan., 1958): 12.*

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## Trends of Hog Cholera Vaccines

Sales of hog cholera-immunizing products, in 1957, as compared with 1956, indicate that 20 per cent more pigs were vaccinated with modified live virus vaccines which must be used with serum; 15 per cent more with inactivated vaccines; 2 per cent fewer with modified live virus vaccines which can be used alone; and 38 per cent fewer with virulent virus and serum. Anti-hog cholera serum sales were down about 8 per cent.—*U.S.D.A., March 4, 1958.*

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*Use of Virulent Hog Cholera Virus to Be Discontinued.*—The U.S.D.A. has proposed that regulations governing interstate movement of swine be amended by permitting the use of modified live virus vaccines and discontinuing the use of virulent virus. —*Fed. Reg., May 7, 1958: 3039.*

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*Swine Carriers of Erysipelas.*—Tissues were taken, at slaughter, from 60 healthy market hogs from a herd, in Ontario, where the disease had occurred. Of the 60 hogs, 16 had been vaccinated with an *Erysipelothrix rhusiopathiae* bacterin when 5 weeks old. Serum tests showed agglutinins for the organism in 19 (44%) of the 44 nonvaccinated hogs and in 6 (37%) of the 16 vaccinated animals. The organism was isolated from the tonsils of 6 (14%) of the nonvaccinated and from only 1 (6%) of the vaccinated hogs, but none were recovered from the gallbladders or spleens.

The agglutination test apparently will not detect all carriers since only 5 of the 14 isolations were from the 19 reacting animals. Although the number is too small to be conclusive, vaccinated swine may be less apt to be carriers.—*H. C. Rowsell in Canad. J. Comp. Med. and Vet. Sci. (March, 1958): 82.*

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*Frequent Hermaphrodism in Goats.*—In five years, 7 per cent of the young in a herd of Saanen goats were hermaphrodites. They were the offspring of 14 female and 7 male goats, of which 2 males and 1 female showed the greatest tendency to produce hermaphrodites.—*Med. Wtryn. (April, 1957): 603.*

# A Study of Vesicular Stomatitis in Man

W. C. PATTERSON, V.M.D.; L. O. MOTT, D.V.M.; E. W. JENNEY, D.V.M.

*Beltsville, Maryland*

VESICULAR STOMATITIS (VS) infection in man apparently is more common than previously supposed. This virus disease of animals, which chiefly affects cattle, horses, and swine, appears in man as an acute, self-limited infection, with signs and symptoms similar to those of influenza. Although most commonly reported as a laboratory infection, VS is transmissible to man under natural conditions and, therefore, must be differentiated from clinically similar diseases.

The first reference to human infections was in 1917,[5] when three persons became ill while working with a contagious disease of horses described as "stomatitis contagiosa." The disease was of short duration and the causative agent was not isolated nor were antibodies demonstrated. In Colorado, in 1944, 3 unconfirmed cases developed in men who had handled lesions on infected cows' teats.[10] During the 1949 Wisconsin VS epizootic, one veterinarian and several herd owners were considered infected.[2]

However, the first confirmed cases of VS were reported, in 1950, in five laboratory workers at the University of Wisconsin.[9] They were exposed to animals experimentally infected with New Jersey-type vesicular stomatitis virus (VSV). The diagnosis was made by demonstrating a rise in serum-neutralizing antibodies.

In 1956, antibodies to VS were found in blood samples collected from 18 persons living on farms where VS had been diagnosed among livestock in southeastern Georgia.[13] At the University of Wisconsin, where the serum-neutralization tests were conducted, approximately half the persons tested had significant antibody titers to VS.[8]

Since 1949, a total of 100 laboratory workers at Beltsville have been tested for VSV complement-fixing antibodies and many blood samples collected have been tested by serum neutralization. When possible, a record was made of the signs and symptoms of the clinically ill. A large percentage of the persons tested had direct contact with VSV, including persons assigned for two-week training programs on vesicular diagnosis. Also tested were animal handlers and personnel having indirect or no known contact with VSV.

## CLINICAL FEATURES

Of 54 positive cases of VS in man, diagnosed by serological tests at Beltsville, 31 (57%) reported clinical symptoms and 16 showed titers, but no illness. Of the other seven, five had worked with VSV prior to the serum-testing program and did not recollect their individual clinical histories; the histories of two were unavailable. The symptomatic picture of many is not complete; due to the mildness of the infection, these workers could recall only having had a "slight touch of the flu" or some similar complaint.

In a Wisconsin group, only the younger persons were infected.[1] The age spread of those tested at Beltsville was 18 to 55 years, and the attack rate seemed to be fairly uniform. It was impossible to make an accurate determination of age susceptibility, because the degree of virus exposure varied so greatly among individuals.

The incubation period could be accurately determined in a limited number of persons. Recently, 12 trainees were first exposed to both New Jersey- and Indiana-types of virus on the same day and daily thereafter for two weeks. Some harvested virus, some prepared inoculums, and others made animal inoculations. Eight of the 12 men reported clinical symptoms.

Symptoms occurred in the five who subsequently had New Jersey-type VSV titers on days 3, 4, 4, 4, and 6, respectively, after first exposure, and in the three who had Indiana titers, at postexposure days 2, 5, and 18, respectively.

In a few cases with only one known exposure to the virus, the incubation periods have been shorter, the minimum being 28 hours. However, in the majority of cases, incubation periods have been two to six days.

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From the Animal Disease and Parasite Research Division, Agricultural Research Service, U.S.D.A., Beltsville, Md. Dr. Jenney is now with the Animal Disease Eradication Division, Agricultural Research Service, U.S.D.A., Beltsville, Md.

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### SIGNS AND SYMPTOMS

Usually, the onset of VS was sudden, marked by chills, fever, and profuse sweating. Generalized aching, especially of the muscles of the arms, legs, and eyes, was common, as were headaches, weakness, and dizziness. These were often more severe the second day. Anorexia was common but only a few persons were nauseated. About 30 per cent had sore throats and about 10 per cent reported substernal distress and coryza. In one man, the base of the tonsils was described as "diphtheritic-like." Lymph nodes, usually cervical and submaxillary, were often swollen.

Fever blisters on the buccal surface of the lips were common and, in 4 cases, there were small, slightly raised vesicles with clear fluid and inflamed bases. Since attempts to isolate virus were unsuccessful, it could not be determined if these lesions were typical of VS or might have been herpes infections, which had been triggered by another infection.

Conjunctivitis, present in about 20 per cent, was probably brought about by the splattering of abrasives into the eye during the preparation of inoculums or of the agent during the inoculations. Irritation to the eye was the initial symptom in these men. The result was a feeling of "sand in the eye," usually accompanied by excessive lacrimation which lasted two to four days; in one man, seven days.

In mild cases (about 30%), there was little or no increased temperature but, in severe cases, it was 101.8 to 104.0 F., usually for 24 hours. Symptoms usually lasted two to three days and only about 10 per cent of infected persons were absent from work. Weakness persisted for several days and a few reported that chills and sweating persisted for several days after the temperature was normal. Complications were not reported, although a giant urticaria developed on one man.

The diphasic nature of VS infections in man previously reported[9] was observed in 3 of our 31 cases, symptoms returning about the fourth day.

Treatment was usually symptomatic.

### COMPLEMENT-FIXATION TESTS

Pre-exposure serum samples were taken from some workers for comparisons with subsequent samples. They were collected without anticoagulant, allowed to clot, and the serum was removed and frozen in sealed bottles at −65 C.

All serums were inactivated at 56 C. for 30 minutes and used at 1:5 dilution. Antigens used (2, 8, and 16%) were New Jersey- and Indiana-types of VSV prepared from infected chorioallantoic membranes and diluted in saline solution. Guinea pig complement was added in the amount of 1.9 units. The antigenic system, consisting of 0.25 ml. of known antigen, 0.25 ml. of unknown antiserum, and 0.25 ml. of complement, was incubated in a water bath at 37 C. for three hours.

After this, 0.5-ml. amounts of sheep erythrocytes sensitized with rabbit amboceptor were added, and the mixture was incubated for an additional 30 minutes at 37 C. Suitable controls of serum, antigen, complement, and sensitized red cells were included in all tests.

*Results.*—Serum samples from 100 persons were tested, using single samples from 36; paired samples (one prior to and the other 18 to 24 days after exposure) from another 36; and 3 to 12 samples from the remaining 28 cases. The latter group was mainly laboratory workers, subjected to periodic re-exposures. In no case was there a positive titer among samples collected prior to known exposure nor among individuals having had VS exposure one or more years prior, but not recently exposed.

Of particular interest were the three groups of 12 veterinary trainees exposed to both New Jersey- and Indiana-types of VSV on the same day that pre-exposure tests were negative.

Two of the 36 trainees with negative reactions had clinical symptoms near the end of the training period, and subsequent blood samples were positive to New Jersey-type VSV. The serological test results are shown by training schools (table 1).

TABLE 1—Prevalence of Vesicular Stomatitis Among 36 Veterinary Trainees

| Reaction | Trainees: Schools 1 | 2 | 3 | Total |
|---|---|---|---|---|
| Positive to New Jersey-type VSV | 1 | 1 | 6 | 8 |
| Positive to Indiana-type VSV | 2 | 8 | 4 | 14 |
| Positive to both types | 1 | 0 | 2 | 3 |
| Negative to both types | 8 | 3 | 0 | 11 |

Those at school 2 were exposed to a particularly virulent strain of Indiana-type virus. All in school 3 showed titers.

The earliest that antibodies have been demonstrated is ten days after the initial clinical symptoms, a man with a 2½+ reaction to New Jersey-type antigen. Titers may occur earlier, but the number of blood samples taken earlier has been limited. Strong 4+ titers have been found at 14 days. In a limited number of cases with a

single exposure, complement-fixing titers showed little or no drop at two months (initial 4+ reactions were usually 3 or 3½+). However, at four months, reactions were weak and a few were negative.

Titers fluctuated in workers subjected to continual re-exposures. There were differences among workers with similar exposures; over a period of years, the titers of some were consistently high to one or both types of virus, while the titers of others remained consistently low.

### VIRUS-NEUTRALIZATION TESTS

Since May, 1953, a large number of serum samples have also been tested for virus-neutralizing antibodies. The serum to be tested was diluted 1:5 and inactivated at 56 C. for 30 minutes. Serial tenfold dilutions of both types of VSV were prepared, using tryptose broth as a diluent and including 2.5 mg. of streptomycin and 250 units of penicillin per cubic centimeter. Equal amounts of inactivated serum and the different virus dilutions were mixed and allowed to incubate for 30 minutes at 25 C.

Groups of eight-day embryonating chicken eggs were inoculated via the allantoic cavity with 0.15-ml. amounts of the virus-serum mixtures. Eggs were observed for deaths up to 72 hours, and the $l.d._{50}$ (50% lethal dose) was calculated by the method of Reed and Muench[10] and expressed in logarithms. The titer of the virus-serum mixture is subtracted from the titer of the virus alone, and the difference, known as neutralization titer, is considered positive if in excess of $10^{-2.6}$.

The virus-neutralization test has been used principally where negative or inconclusive results were obtained on complement-fixation tests.

*Results.*—The earliest diagnostic virus-neutralization titer was at 11 days following symptoms, and the highest titer was $10^{-5.77}$. Several have had high titers to both types at the same time; one trainee had a New Jersey titer of $10^{-5.70}$ and an Indiana titer of $10^{-4.84}$.

Neutralization tests have identified VS in 6 cases where complement-fixation results were negative and in 3 cases where inconclusive results were obtained on complement fixation. Many of these samples were collected several months after exposure, and complement-fixation titers had probably disappeared.

Duration of neutralizing antibodies seems to resemble the pattern found in the bovine and equine species, where a peak titer is reached in one month and persists for several years. A serum sample from a laboratory worker who had had no known exposure to VSV for two years was completely negative on complement fixation but still had a neutralizing titer of $10^{-3.0}$. A comparison of complement-fixing and virus-neutralizing antibodies indicates that peak titers in both instances are reached in 20 to 40 days. Complement-fixing antibodies have usually disappeared at 60 to 90 days.

### DISCUSSION

While a major portion of these VS infections might be classed as laboratory infections, situations which resulted in exposure were often similar to those which might exist on a farm when animals are affected with VSV, since the virus is spread by their excessive salivation or by actual contact with virus-laden tissue when animals are examined or treated.

The trainees, laboratory technicians, and animal handlers had been given detailed instructions on safety procedures: the use of rubber hats, gloves, raincoats, and boots; the use of coveralls as an undergarment and a change of clothes when leaving a contaminated area; and complete decontamination by use of 2 per cent sodium hydroxide solution on all rubber gear, following the handling of any infected animal or viable agent.

Nevertheless, 95 per cent of the laboratory workers, 100 per cent of the regular animal handlers, and 70 per cent of the trainees showed titers. In contrast, animal handlers and professional people not in contact with VSV showed negative results, probably because of the tight quarantine procedures used.

An attempt has been made to tabulate the percentages of positive titers by type of exposure (table 2). Laboratory workers had frequent exposures, animal handlers had less frequent exposures, and the trainees had frequent exposures, to both animals and materials, but only for two weeks.

All of the 20 laboratory workers had specific titers, except one who spent only a short time in our laboratory; he subsequently had VS while working with VSV in another laboratory. Of the 37 trainees, 26 (70%) had specific titers. Of the 17 animal handlers, only 8 were regularly assigned to projects on VS and all of these showed positive reactions. Of the 54 persons having positive titers, 57 per cent reported clinical symptoms (table 3).

The virus may enter the body by several routes. Principal entry is probably by the nasopharyngeal route as spray droplets or

TABLE 2—Prevalence of Vesicular Stomatitis Among 100 Persons, According to Type of Exposure, on the Basis of Complement-Fixing and Virus-Neutralizing Antibodies

| Type of contact | No. showing positive reaction: New Jersey-type VSV | Indiana-type VSV | Both types VSV | Negative | Total | Positive titers (%) |
|---|---|---|---|---|---|---|
| Frequent contact — extended duration (laboratory workers) | 8* | 3 | 8 | 1** | 20 | 95.0 |
| Frequent contact — 2-week duration (trainees) | 9 | 14 | 3 | 11 | 37 | 70.2 |
| Irregular contact — extended duration (animal handlers) | 5 | 2 | 1 | 0 | 8 | 100.0 |
| Irregular contact — 2-week duration (animal handlers) | 1 | — | — | 8 | 9 | 11.1 |
| Prior contact (none in past 2 years) | — | — | — | 6 | 6 | 0 |
| Family contact | — | — | — | 3 | 3 | 0 |
| No contact | — | — | — | 15 | 15 | 0 |
| Field contact | — | — | — | 2 | 2 | 0 |
| Totals | 23 | 19 | 12 | 46 | 100 | 54.0 |

*Major portion of research with New Jersey-type VSV; **worker subsequently had VS.

direct contact. The frequency of conjunctivitis, where in many cases irritation of the eye preceded general symptoms, would indicate that this might be a common site of entry. Although local lesions have not been observed, entry may take place through exposed abrasions. Attempts to transmit VSV in domestic and laboratory animals by conjunctival instillation have not been made at Beltsville. Vesicular stomatitis infections have been spread easily by the nasopharyngeal route by using aerosols.

Human infection may result from sources other than contact with infected domestic animals. In a survey of wild animal populations in an enzootic area of southern Georgia, 48 per cent of 59 raccoons, 60 per cent of 25 deer, 83 per cent of 34 feral swine, and 33 per cent of 8 bobcats had high neutralizing antibodies for New Jersey-type VSV.[8] In 1955, VSV was reported to have been mechanically transferred by insects of the order Diptera.[6] It would be possible, therefore, that persons other than those working directly with VSV might be infected.

This virus is reported to have neurotrophic properties.[4,7,12] While encephalitis resulting from VS has not been observed in man and is quite rare in natural infections of domestic animals, it might be well to consider this virus as the etiological agent of undiagnosed encephalitides.

Although the infection is transmitted easily from animals to man, we have no evidence of spread from man to man. In several instances, families of infected workers have been tested by complement fixation or serum neutralization, with negative results. It is extremely difficult to isolate virus from reacting individuals. One well-documented isolation from blood of an infected worker has been reported,[5] but nasopharyngeal washings collected at the same time were negative. Our attempts to recover virus from conjunctival, nasal, and pharyngeal secretions and from blood have been consistently unsuccessful.

Practicing physicians have several times made a diagnosis of influenza in persons who subsequently have shown significant rises in VS antibodies. The serum samples of the trainees were tested against antigens of four strains of influenza virus, including two type A (PRB and Cuppett) and two type B (Lee and 1210). In one training school, four of the 12 trainees had diagnostic rises against type B (1210) anti-

TABLE 3—Clinical Symptoms Among 54 Persons with Positive Titers to Vesicular Stomatitis Virus

| Type of contact | No. with positive VSV titers | No. with clinical symptoms | No. Positive, with symptoms (%) |
|---|---|---|---|
| Frequent contact — extended duration (laboratory workers) | 19 | 10 | 52.6* |
| Frequent contact — 2-week duration (trainees) | 26 | 14 | 53.8 |
| Irregular contact — extended duration (animal handlers) | 8 | 7 | 87.5 |
| Irregular contact — 2-week duration (animal handlers) | 1 | 0 | 0 |
| Totals | 54 | 31 | 57.4 |

*Not included were five men who had worked with VSV prior to the development of serological tests and did not have definite recollections of symptoms.

gens, but all were negative to VS. One trainee reported clinical symptoms which were thought to be due to a VS infection but, apparently, was influenza. In the second school, none had significant rises to influenza antigens but five of 12 trainees were ill and all were positive to VSV by complement-fixation test.

That VS appears in man as an influenza-like infection is unusual. In livestock, the principal sign of VS is the formation of vesicles on the mucous membranes of the mouth of cattle and horses and on the snout and feet of swine. In addition, many other species, including laboratory animals and chickens, will react with typical vesiculation following inoculation. In cattle and swine, VS is clinically indistinguishable from foot-and-mouth disease (FMD) but, in man, these diseases can be differentiated since, in FMD, vesicles erupt on the hairless parts of the body.[14]

While it may be necessary to differentiate human VS infections from FMD, herpes, variola, and other vesicle-forming conditions, it is more likely that differentiation would have to be made with other mild febrile infections, in which case a positive diagnosis would have to depend on the demonstration of a rise in complement-fixing or virus-neutralizing antibodies or on the isolation of virus. Improved serological techniques have simplified the diagnosis of this infection. Two serum samples should be collected—one at the start of illness and a second 14 days later—in order that a rise in antibody titer may be shown.

Vesicles might form on the hairless parts of the body, especially the hands, in VS infections under natural conditions, but such lesions have not been seen at Beltsville. This is probably due, in part, to the protective clothing worn and the safety precautions exercised by men working with viable virus. The use of protective face masks has been suggested but has not been put to use because of the mild nature of the disease and the good immunity produced following exposure.

In May, 1949, while with the Mexico-United States Commission for the Eradication of Foot-and-Mouth Disease, one of the authors (L.O.M.) observed an accidental intradermal inoculation with New Jersey-type VSV of the left index finger of an American veterinarian. A large vesicle developed at the site, and fluid aspirated from it produced vesicles when inoculated into the plantar pads of susceptible guinea pigs. Three passages of this virus in guinea pigs were made. The veterinarian did not develop a generalized reaction. Similarly, the susceptible farmer who does not use protective clothing might well develop lesions while milking infected cows or handling sick pigs.

In southeastern United States, VS is known to exist enzootically in both domestic animals and certain wildlife.[8] Virus isolations of New Jersey-type VS have been made from this area each year from 1952 to 1957, starting in May and June.

Although human infections are usually mild and without complications, recent evidence indicates their occurrence is more widespread than previously supposed. They should be considered by public health officials in areas where VS is known to exist.

## SUMMARY

1) Vesicular stomatitis (VS) appears in man as an acute, self-limited infection, with signs and symptoms similar to those of influenza.

2) To date, 54 positive cases of VS in man have been diagnosed among laboratory workers, trainees, and animal handlers at Beltsville.

3) Of the laboratory workers and animal handlers assigned to projects on VS during the past seven years, 96 per cent have shown positive titers to vesicular stomatitis virus (VSV).

4) Of three groups of trainees assigned to vesicular-diagnosis training for a two-week period, 70 per cent had positive titers to VSV.

5) Of the men showing positive VS titers, 57 per cent reported clinical symptoms.

6) Human infections of VS are more common than previously supposed.

### References

[1] Brandly, C. A.: Comments. Proc. Book, AVMA (1955): 463.

[2] Brandly, C. A., Hanson, R. P., and Chow, T. L.: Vesicular Stomatitis with Particular References to the 1949 Wisconsin Epizootic. Proc. Book, AVMA (1951): 61-69.

[3] Burton, A. C.: "Stomatitis Contagiosa" in Horses. Vet. J., *73*, (1917): 234-242.

[4] Cox, H. R., and Olitsky, P. K.: Neurotropism of Vesicular Stomatitis Virus. Proc. Soc. Exptl. Biol. and Med., *30*, (1933): 653-654.

[5] Fellowes, O. N., Dimopoullos, G. T., and Callis, J. J.: Isolation of Vesicular Stomatitis Virus from an Infected Laboratory Worker. Am. J. Vet. Res., *16*, (1955): 623-626.

[6] Ferris, D. H., Hanson, R. P., Dicke, R. J., and Roberts, R. H.: Experimental Transmission of

Vesicular Stomatitis Virus by Diptera. J. Infect. Dis., *96*, (1955): 184-192.

[7]Frank, A. H., Appleby, A., and Seibold, H. R.: Experimental Intracerebral Infection of Horses, Cattle, and Sheep with the Virus of Vesicular Stomatitis. Am. J. Vet. Res., *6*, (1945): 28-38.

[8]Hanson, R. P., and Brandly, C. A.: Epizootiology of Vesicular Stomatitis. Am. J. Pub. Health, *47*, (1957): 205-209.

[9]Hanson, R. P., Rasmussen, A. F., Jr., Brandly, C. A., and Brown, J. W.: Human Infection with the Virus of Vesicular Stomatitis. J. Lab. and Clin. Med., *36*, (1950): 754-758.

[10]Heiny, E.: Vesicular Stomatitis in Cattle and Horses in Colorado. North Am. Vet., *26*, (1945): 726-730.

[11]McCroan, J. E.: Vesicular Stomatitis Infection in Man. Morbidity and Mortality Rep., *5*, U.S. Dept. of Health, Education, and Welfare, Washington, D. C. (1956): 1.

[12]Radeleff, R. D.: Clinical Encephalitis Occurring During an Outbreak of Vesicular Stomatitis in Horses. Vet. Med., *44*, (1949): 494-496.

[13]Reed, L. J., and Muench, H.: A Simple Method of Estimating Fifty Per Cent Endpoints. Am. J. Hyg., *27*, (1938): 493-497.

[14]Vetterlein, W.: The Diagnosis of Human Foot-and-Mouth Disease. Prophylaxe, *1*, 1954.

## Report on Zoonoses

The following items are from the reports *Morbidity and Mortality* issued weekly by the U.S. Department of Health, Education, and Welfare.

*Histoplasmosis.*—A 66-year-old woman, in Virginia, suffering chest pains, headache, fever, and malaise, with swollen neck glands, reacted to the intradermal histoplasmin test. She had worked with dirt, for her flowers, from a pen near the chicken coop.—*April 4, 1958.*

A girl, 10 years old, in Arkansas, who had a long febrile, respiratory illness, was positive to the histoplasmin skin test. She had been playing in chickenhouses.—*April 18, 1958.*

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*Rabies.*—A child, 4 years old, in Ohio, was bitten on the forehead by a stray dog on Dec. 24, 1957, became ill five weeks later, and died in three days. Negri bodies were found in the brain and mouse-inoculation tests were positive for rabies.—*March 14, 1958.*

A South Carolina woman was bitten on a finger by a wild fox on Feb. 7, 1958; rabies vaccine treatment was begun February 8 and 14 doses had been given by February 21. She developed symptoms and signs of rabies on March 1 and died March 4. The fox was killed and Negri bodies were found in the brain.—*April 4, 1958.*

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*Ringworm.*—In Ohio, 18 children in a school developed ringworm which was traced to a cat given to their teacher as a Christmas gift.—*March 14, 1958.*

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*Taeniasis.*—*Taenia saginata* infection was found in two women and one man, in Arizona, who liked to eat rare beef. Each had noticed vague abdominal discomfort for more than a year. A 4-year-old boy was infected with *Taenia solium* after eating "fairly well-cooked sausage".—*April 4, 1958.*

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*Trichinosis.*—Nine persons, in Minnesota, developed trichinosis after having eaten homemade pork sausage. Larvae of *Trichinella spiralis* were found in the sausage. The swine may have been infected by rats in a nearby dump.—*March 28, 1958.*

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*Treating Glanders.*—Glanders in man or in the equine species will respond to treatment with sulfathiazole, sulfadiazine, or sulfamethazine. Other antimicrobial substances are of little value.—*Inst. path. d'hyg. anim., Bucharest (1957): 61.*

## Field Investigations of Myoclonia Congenita

Certain boars may sire large numbers of trembling pigs, apparently independent of the breed, genetic background, or nutritional status of both dams and sires. Hog cholera is not a factor. Average death losses on 42 farms were only slightly greater among affected than in nonaffected litters. Gilts were more apt to bear trembling pigs than were sows.

Evidence of a mild disease process was present among either sires or dams of affected litters on more than 20 per cent of the premises involved. The authors suggest that this condition of baby pigs is of infectious origin.—[*M. W. Stromberg and R. L. Kitchell: Studies on Myoclonia Congenita. I. Review of Literature and Field Investigations. Am. J. Vet. Res., 19, (April, 1958): 377-382.*]

## Pathology of Myoclonia Congenita

The prominent histological lesion in this disease is a widespread vasculitis involving the smaller arteries and some of the smaller veins. The changes are inflammatory, degenerative or, occasionally, proliferative with partial or complete oblitera-

tion of the lumen. Sites of vascular damage included heart, spleen, kidneys, lungs, lymph nodes, dura mater, thymus, thyroid gland adrenal glands, gastrointestinal tract, tail, and pancreas.

Grossly, edema, thickening, and variable degrees of hemorrhage were seen consistently in the transverse sinus region of the cranial dura. Less common was congestion and hemorrhage in liver, brain, lymph nodes, kidney, extrinsic ocular muscles, lung, spleen, and thymus.—[*L. J. Hanson, M. W. Stromberg, R. L. Kitchell, and H. C. H. Kernkamp: Studies on Myoclonia Congenita. II. Gross and Microscopic Pathology. Am. J. Vet. Res., 19, (April, 1958): 383-387.*]

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*Glaucoma in Man.*—About 2 per cent of all persons over 40 are estimated to have undiagnosed glaucoma; below 40 the number is negligible. Because of aging population and the need for early diagnosis if blindness is to be prevented, general practitioners are being urged to develop a simple technique of testing for glaucoma, including use of the tonometer.—*J.Am.M.A. (March 15, 1958): 1333.*

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*Lung Abscesses.*—A series of 135 patients with lung abscesses, between 1943 and 1954, were compared with those in earlier decades. The incidence had apparently diminished by one third since antibiotics had become available. The cause was bronchial aspiration (38%); pneumonia (22%); embolism (4%); and was undetermined in 36 per cent.—*J.Am.M.A. (March 22, 1958): 1504.*

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*Brucellosis and Heart Disease in Man.*—There is evidence that calcific aortic stenosis often is the residual lesion of brucellar endocarditis, chiefly due to *Brucella abortus*. In fatal brucellosis, chronic endocarditis is an almost constant finding, with ulcers on the aortic valve which have tended to heal and calcify. Patients with this lesion often have a high agglutinin titer against Brucella. Also, the sex incidence (73% male) is comparable to that of brucellosis.—*J.Am.M.A. (March 8, 1958): 1123.*

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The first case of human infection by *Brucella suis*, in the British Isles, occurred in a boy who was believed to have contracted the infection from drinking unpasteurized cow's milk while on a farm. Blood cultures yielded the organism and agglutination tests were positive (1:1,280). The infection responded to chlortetracycline therapy.—*J.Am.M.A. (March 1, 1958): 1078.*

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*Treating Brucellosis of Sheep.*—Thirteen sheep, in Russia, were infected, conjunctivally or subcutaneously, with *Brucella abortus*. Four served as controls while 9 were given a course of treatment consisting of 6 doses (1 Gm.) of chlortetracycline plus 2 doses (8 ml.) of immune serum. About three weeks later, smaller doses were repeated. Of the 9 sheep treated, 8 were serologically negative 26 days after treatment commenced, and were bacteriologically negative at necropsy on day 46.—*Vet. Bull. (Feb., 1958): Item 364.*

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*Brucellosis in Sheep in Germany.*—When a shepherd became ill with brucellosis, a serological test of his 190 sheep found 49 positive. Nineteen persons with brucellosis were reported in northern Württemberg, and practically all worked with sheep. Clinical signs of brucellosis in the sheep were rare. However, reactors were found in 18 flocks.—*Berl. u. Münch. tierärztl. Wchnschr. (Sept. 15, 1957): 386.*

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*Brucellosis in Horses.*—Brucellosis in horses is sufficiently frequent to be of importance. Any of the three Brucella organisms may be responsible. Infection can be transmitted from horse to horse but it is more often acquired from other species. Infection frequently localizes in the bursae at the poll and withers. Female genitalia are rarely involved. There is no definite successful therapy.—*Med. Wtrym. (Sept., 1957): 454.*

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*Erysipelas Organisms in the Tonsils of Swine.*—Tonsil excretions (516 samples) were taken at monthly intervals from 55 swine immunized against erysipelas, and 67 from nonimmunized swine. The organism was isolated from none of those 4.0 to 5.0 months old, from 36 per cent of those 7.0 to 8.0 months old, and from 50 per cent of those 1.5 to 4.5 years old. The organisms from tonsils of immunized swine were not pathogenic for pigs.—*G. Kucsera in Magyar allatorv. Lap. (Jan., 1958): 15.*

# Adequate Poultry and Meat Inspection

S. W. BARKER

*Chicago, Illinois*

I AM NOT a veterinarian. My training is in the field of labor relations and administration in the area of slaughterhouses and meat-processing plants. However, in the past five years, I have become well acquainted with veterinarians and their professional activities, particularly where it affects the workers engaged in the slaughtering of animals.

In the course of my union's attempts to get adequate federal inspection of poultry on an interstate basis, I have learned much by participating in Congressional hearings with representatives of your associations. I have learned that there are more than 80 diseases transmissible from animals and birds to human beings. I know from experience, and from listening to talks on this subject by veterinarians, that salmonellosis causes large-scale diarrheas and intestinal problems. I have also learned to pronounce the names of a variety of diseases, such as trichinosis, psittacosis, or ornithosis, and know something about them. My knowledge of the wealth of material which you must assimilate has raised your profession in my eyes and the eyes of many others of the public.

However, I am sometimes discouraged at the lack of administrative and public responsibility that has been evident on the part of many of your associations and many of the individual members of your profession. Therefore, I want to discuss the needs of meat inspection as it concerns the consumer, the worker, and the producer, as well as to give you our views regarding the responsibilities of the veterinarian brought on by these needs.

## NECESSITY FOR THE CONSUMER

Our standards of cleanliness are higher than those of any other country in the world and these standards should continue to be raised.

Certainly all agree that meat and poultry inspection is a necessity for the consumer. The housewife can not inspect the birds or animals to be slaughtered. She can not evaluate the sanitation or cleanliness of the employees or the plants which slaughter the animals. Nor can she know whether the plant has a good water supply, clean tables, walls or knives, or whether a knife used to cut an abscess is sterilized before further use. She is at the mercy of the packer. Usually she is safe; however, the minority packer may purchase animals that are dead or almost dead, dress them, and sell them to the consumer.

This type of packer is a danger to the community and to those who work for him in the slaughtering plants. Equally important, he is a danger to the economic stability of the industry itself. He is the worst kind of competition, as his products compete against quality products properly processed and tend to tear down standards of sanitation enforced by ethical packers.

I understand that one of the first suggestions a large animal practitioner makes, when an animal has little chance of recovering from certain diseases, is that it be sent to market. The slaughter of such animals must be under rigid antemortem and postmortem inspection procedures. Having passed both of these inspections under a competent system, it will have saved for the producer the money involved in the sale of the animal. It will not have harmed the consumer and will often result in information as to the actual disease and its diagnosis.

## NECESSITY FOR THE WORKER

Adequate inspection is needed for the slaughterhouse employee for he is thereby assured, insofar as possible, that sanitation is proper, birds and animals slaughtered are healthy or, if not, that they are properly disposed of; that if they are likely to come in contact with certain highly infectious diseases, the veterinarian will inform them.

The need of the slaughterhouse worker for protection against infectious diseases is vividly illustrated by the Bureau of Labor statistics figures, which show poultry processing as one of the three most hazardous industries, largely because of occupational illness.

Mr. Barker is director, Poultry Department, Amalgamated Meat Cutters and Butcher Workmen of North America, AFL-CIO.

Although federal meat inspection covers the majority of meat-packing plants in the country, those who work on cattle, swine, and sheep have only approximately half as much occupational illness. Even then, meat packing is nearly twice as hazardous as the average of all other industries.

### NECESSITY FOR PRODUCER AND PROCESSOR

Local producers and slaughterhouse operators are finding it increasingly difficult to sell their products without inspection, since most of our food is sold by chain store operations which are geared to interstate and federally graded poultry and meat, both of which require inspection. The local slaughterer needs to have inspection to protect himself from liability for sale of inferior, diseased products.

Reports of the veterinary inspector should be lucid and informative, as they may result in prophylactic treatment against the diseases involved. This information will aid health and agricultural authorities in disease prevention and in holding losses to a minimum. Thus, the producer and processor not presently covered by federal inspection needs the protection, guidance, and the savings that inspection can bring to him.

### WHOSE RESPONSIBILITY?

The greatest share of responsibility for adequate meat inspection rests on you as veterinarians and upon your profession. It is true, however, that the responsibility for proper meat and poultry inspection must be borne by all—the producer and processor, the employee, and the consumer, as well as the doctors of veterinary medicine.

Antemortem inspection consists of determining whether the animal to be killed is healthy. Certainly, I can tell when an animal is obviously ill. However, I can not tell whether that animal is so ill that it should not be slaughtered for human food, for I can not tell what the illness is or whether it would make the meat unfit for human consumption. Only the veterinarian is capable of doing this.

On postmortem examination, I can not tell by looking at a liver, spleen, or heart, or at the pleural cavity, whether the animal is fit for human consumption. Certainly I could, under the supervision of a veterinarian, determine whether these organs look normal or abnormal; however, I would have to be guided by a doctor of veterinary medicine as to the final disposition of such carcasses. I might be tempted to throw out more food than is necessary, or I might allow some to be used which should not be. Obviously, only the veterinarian is qualified to supervise postmortem examination of animals slaughtered for meat purposes.

### RESPONSIBILITY FOR SANITATION AND WORKERS' HEALTH

I believe every veterinarian who works in the field of animal husbandry, particularly in connection with those animals which are used for food, should read Upton Sinclair's novel, "The Jungle." Many of the conditions vividly illustrated in that novel still exist in some of the small intrastate meat-packing plants. Men and women who work in slaughterhouses under these conditions need the protection that a trained veterinarian can give them. It is necessary that certain sanitary provisions be made to protect the worker from as many of the industrial disease hazards as is possible.

Veterinarians should notify slaughterhouse workers, or their representatives, when they suspect that diseases such as psittacosis or ornithosis are suspected. In the last three or four years, there have been a number of deaths among slaughterhouse workers which, I believe, could have been prevented had the workers been alerted to the presence of ornithosis. It would have aided their doctors in giving the proper treatment at the proper time.

A serious aspect of such illnesses of slaughterhouse workers is loss of income. Often, this loss is not protected by the state industrial laws, because the veterinarian has failed to advise the worker and management.

This is of considerable concern to me as a representative of the workers in slaughterhouses. It should also concern the veterinarians. This responsibility is one which can not be shunted off to management or to a physician who is not present in the plant. Only the veterinarian can make the proper diagnosis and initiate the necessary precautions once he suspects the presence of a transmissible disease.

### RESPONSIBILITY TO INFORM THE PUBLIC WHAT IS NEEDED

One of the paramount responsibilities which many veterinarians fail to see or fail

to act on is the responsibility of bringing to the attention of the public the need for adequate safeguards, and to insist that such be carried out by veterinarians. This is often considered "tooting your own horn." However, unless this is done it is, in my mind as a citizen, negligence toward the consuming public who are ignorant, for the most part, of the fact that in most states there are many carcasses of animals that are not inspected for wholesomeness.

I understand that the veterinary association has been attempting to get proper meat and poultry inspection started in these states. I feel that, in light of what we believe to be the veterinarian's responsibility to the public, it is of the utmost importance to continue such activities. The veterinarian's responsibility does not end with the act of professional competence in the antemortem and postmortem inspection of carcasses; that is just the beginning.

Veterinarians owe it to the public and to state governments, in general, to insist that when federal government inspection of interstate shipped meat is accomplished, state residents should likewise be protected by the proper inspection of food products of animal origin from concerns that ship intrastate only.

### RESPONSIBILITIES OF VETERINARIANS

Since the veterinarian is the only person properly trained to inspect animals to be used for human consumption, he must make or supervise antemortem and postmortem inspections and make dispositions as to edibility. He must protect, or aid in protecting, workers from diseases transmissible to them. His determination of edibility will protect the housewife from the same transmissible diseases whether they be caused by ingestion or by contact, and he must inform the public as to his knowledge in the area of meat inspection.

He can not achieve any of these unless he insists on proper legislation where needed in order to implement those professional responsibilities. To shirk any of these is to shirk all of them. You need only look at the state systems of meat inspection for the substantiation of these facts.

Veterinarians should take the leadership in informing the public, legislatures, my group and groups like mine, which includes the workers in the field, as to the facts. I am certain that when the veterinary profession takes this leadership, they will enhance their prestige in the minds of the public, the producer, and the consumer. With prestige comes responsibility. This responsibility is theirs.

## Immunizing Chickens Against Infectious Bronchitis

When chickens were 4 weeks old, in Holland, one large group was given infectious bronchitis vaccine in the drinking water; another group on the conjunctiva; a third group were simultaneously given the same vaccine and Newcastle disease vaccine both in drinking water; and those in a fourth group were left as unvaccinated controls.

When the chickens were 4 months old, they were revaccinated, those in the first and second groups with the same infectious bronchitis vaccine on the conjunctiva, and those in the third group with both this and the Newcastle disease vaccine in drinking water.

Three months after the second vaccination when the birds were laying about 80 per cent, those in all groups were challenged with infectious bronchitis virus. The vaccinated birds showed no ill effects but egg production in the control group decreased rapidly to 20 per cent, then slowly increased but three months later had not surpassed 60 per cent, and many of the eggs were abnormal. Several control birds died from peritonitis.

Apparently, immunity to infectious bronchitis can be expected after the second vaccination by any of the above methods.—*J. Richter in Tijdschr. Diergeneesk. (Jan. 15, 1958)*: 46.

*Effect of Oxytocin on Milk Ejection.*—In more than 100 trials, with a cow that was uniquely refractory to stimuli which cause milk ejection, it was found that 0.06 unit of oxytocin, given intravenously, was the smallest effective dose and that both the amount of milk and the butterfat percentage increased with the dose. After the cistern milk was removed, a dose of 0.06 I.U. resulted in a secretion of 3.1 lb. of 2.3 per cent milk; 0.18 I.U. resulted in 5.7 lb. of 4.8 per cent milk; 0.50 I.U. resulted in 8.5 lb. of 5.1 per cent milk; and 2.50 I.U. resulted in 11.0 lb. of 5.2 per cent milk.

When Relaxin was similarly tested, it had little noticeable effect on milk ejection. —*J. Dai. Sci. (April, 1958)*: 537.

# Charms and Amulets in Animal Disease

THOMAS DAVIDSON

*Coulsdon, Surrey, England*

WIDESPREAD EPIZOOTICS among farm animals seem to have been a recurring feature of British farming in the past. Handley,[26] writing on Scottish agriculture, mentions a series of years between 1600 and 1800 that are known to have been years of dearth. The seven "ill" years (1695-1702), known as King William's years, were particularly bad. The history of English epizootics previous to the black death is almost wholly a history of famine sickness.[16] Between 679 and 1320, 60 years of dearth are recorded. Rinderpest, in 1713, 1745, 1774, and 1799, swept through most counties of England and, in 1865-1866, roughly half a million cattle died in the London and larger provincial cattle markets. It last occurred in England in 1877.[36]

There were many reasons for these epizootics. The recurring cycle of "need years," that is, food shortages and near famine which brought with them disease and epizootics, was a constant burden at a time when farming at its best was vitiated by dirt, ignorance, and superstitition. Ordinary safeguards, sanitation, and prophylaxis were almost unknown and veterinary knowledge was of the most elementary kind. Sickness and disease, due mostly to a violation of natural laws, was superstitiously attributed to the dreaded powers of evil spirits. Under these conditions, therefore, it is not difficult to see how easily the farmer came to be persuaded that there really was some special virtue in the use of charms and amulets as the panacea for these ills.

The words "charm" and "amulet" are often interchangeable, but there is this fundamental difference: Charms are usually manufactured and expendable either by virtue of their material or usage, while amulets are permanent and intended to be worn or attached to the objects being protected. Since the mass of literature on the subject is so extensive, it is necessary to summarize it somewhat severely; furthermore, as the same charms or combination of charms were used for a variety of diseases, any system of rigid classification in terms of diseases would be difficult and confusing. The treatise, however, can be simplified by dividing the charm types into four main groups, as follows: (1) inscribed charms, spells, prayers, and incantations; (2) natural objects, *i.e.*, perforated, grooved, and holed flints, stones, and rock crystal; (3) manufactured objects which by association and usage have become invested with special magical powers and virtues; and (4) charms incorporating elements from all groups.

GROUP 1

In the first group belong the rhymed chants and degenerate prayers which were such a common feature of Scottish highland and, to a more limited extent, North Irish folklore. The following, known as the "Cud-Chewing Charm," is fairly typical and was applied to cattle suffering from surfeit caused by eating too much grass or drinking too much water. The charm is repeated three times, representing the persons of the Trinity:

> If thou hast eaten the grass of the nine bens,
> Of the nine fells, of the nine hillocks,
> If thou hast drunk the water of the nine falls,
> Of the nine streams, of the nine lakelets,
> Poor *"Gruaigein"* of the hard paunch,
> Loved one, chew thou thy cud.
> Poor *"Gruaigein"* of the hard paunch,
> Loved one, chew thou thy cud.[14]

And, more simply in the Hebrides, cattle distemper could be cured by means of a simple chant:

> Whoever has done you this deed of malice,
> A brown man or white woman,
> I send these three to check them,
> The Father, Son, and Holy Ghost.[12]

The earliest references, however, to the use of charm cures in the literature are to be found in an Anglo-Saxon manuscript of the tenth century entitled "Lacnunga," where we find cures in the form of pagan and Christianized-pagan prayers, narrative chants, and simple recipes. The following is a simple pagan recipe for the cure of an "elf-shot" horse:

If a horse be elf-shot, then take the knife of

Mr. Davidson is a physicist in Coulsdon, Surrey, England.

Specimens in figures 1, 4, 5, 6, and 8 are in the Pitt Rivers Museum, Oxford; figure 2, Ashwell Museum, Ashwell; figure 3, 7, and 9, National Museum of Antiquities of Scotland, Edinburgh.

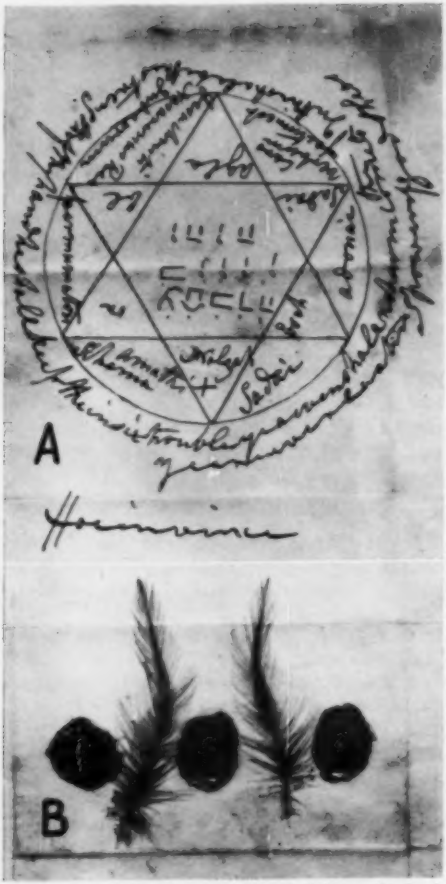


Fig. 1—Inscribed charm from Yorkshire, England, 1870 (A); it was sealed with three black seals interspaced with hackles from a red cock's neck (B).

which the haft is horn of a fallow ox, and on which are three brass nails, then write upon the horse's forehead Christ's mark, and on each of the limbs thou may feel at; then take the left ear, prick a hole in it in silence; this thou shalt do; then take a yerd, stroke the horse on the back, then will it be hole, and write upon the horn of the knife these words, *Benedicite omnia opera domini dominum*. Be the elf what it may, this is mighty for him to amend.[26]

Elf-shot was the wounding, or the disease inflicted on an animal shot or struck down, by an elf arrow. These arrows, in reality neolithic flints, were thought to have been derived from and used as weapons by the fairies. Cows were particularly susceptible and exhibited various symptoms. In Scotland, for example, the elf-shot cow "refuses its food, looks languid and breathes hard;"[25] in England, "the disease (elf) in horned cattle causes an over-distention of the first stomach from the swelling of grass and clover when eaten with the morning dew upon it,"[27] and in Ireland, "the animal's hair stands up on her back, her ears lifeless and hanging."[23]

In the Pitt Rivers Museum, Oxford, there are two inscribed charms for the cure of unspecified diseases. The first was used by the "wise man of Stokesby" Yorkshire, about 1820. The text follows:

> Bleed the sick animal and dip in amongst the blood some hair cut off the animals mane, tail and forequarter, then put in three spoonfuls of salt. Then have a sheep's heart stuck with 9 new pins, 9 new needles, 9 small nails. Then roll the heart well in the blood and at midnight put the heart on a good fire of coals and ash sticks, and as it burns read Psalm 35-104, 109-56-77. Read them three times over and let all be done by one O'clock. Make doors and windows fast, keep all very secret and have a strong faith. If this does not answer you must do it twice more at the full and change of the moon, just as you did the first time with fresh things. Should this fail you need go to no one else as they will not nor can not cure your beast.

The other, also from Yorkshire (fig. 1A), was kept and presumably used by "the largest farmer in Danby" to protect cattle from disease. It was found in 1870 and consists of a half sheet of notepaper on which a magic pentacle is inscribed within a circle with some imitation Hebrew letters, the name of God, the magic word AGLA, and biblical quotations. The charm was sealed with three black seals interspaced with hackles from a red cock's neck (fig. 1B).

GROUP 2

The material in the second group consists mainly of perforated and naturally-holed stones and flints, rock-crystal balls, odd-shaped twigs and roots. Holed stones, for example, were kept in the cattle watering trough at Penninghame, England. The farmer's wife occasionally dipped a besom in the trough, whisked it around several times, and then sprinkled the water over the cattle as they stood around the trough. Another naturally perforated stone on the farm of Carchew, known locally as "Old Nanny's trough stane," was used in the same way until 1891.[22]

The flint amulet (fig. 2) is interesting

because of its large size (14 by 10½ by 4 inches; wt. about 15½ lb.). It was found in the stables of a farm at Ashwell, England. In 1850, the stables were burned. When they were rebuilt, the flint was not rehung. A few years later, 3 horses died from "glanders" (a glandular swelling of the neck). A horse doctor suggested a charm, so the flint was suspended to the rafters of the stable. From that day, the stable was free from disease. The horsekeeper added that "it was important to have one of these amulets available at foaling time."[3]

As a curative amulet against the murrain, a rough disc of yellow flint, 2¾ inches in diameter, was suspended in a byre at Slains, Aberdeenshire;[5] at Ballyvourney, Ireland, a spherical stone of basalt about 5½ inches in diameter was used for the same reason.[2] Another Irish stone of banded agate, in the form of a perforated ball about 2 inches in diameter, known as the Imokilly amulet, was dipped in water and the water given to the cattle.[2]

As a rule, where these stones are used as cure amulets, they are either dipped in water and the water given as a drench to the cattle, or the affected part of the animal or sometimes the whole animal is rubbed with the stone. For example, beach-rolled pebbles of clay slate were used in Strathspey to rub down the affected part, and with each rub the Gaelic formula *aon patsher dha patsher* (one pater, two pater, and so on, according to the virulence of the disease and number of rubs) was repeated. To end the ceremony, the "charm doctor" repeated:

*Gu maith an diugh, 's fherrar' am maireach;*
*An deigh sin gun dad ach 'n larach.*
This day well, next better (far);
After that nought but the scar.[7]

Similarly, but more simply, a curing stone called *Clach Ruaidhe*, or red stone, from Ledaig, Scotland, was used until the middle of the nineteenth century for "rubbing the udders of cows when hardened and inflamed by disease."[6] Certain pebbles and coins were in use until about 1850 to cure cattle diseases at Perthshire. The person seeking the cure brought water from a stream "on the march between two Lairds, where the living and the dead passed, in a three girded luggie." Alternatively, the stones and coins were dropped into the water which was stirred round by the hand three times. The water was then

Fig. 2—Flint amulet from Ashwell, England, 1850.

poured into a bottle and given as a drench to the cattle.[4]

A flat whorl of hard sandstone, the property of the famous witch Meg Elson of of Kirkmaiden, Scotland, was used for curing elf-shot cattle. A red woolen thread was put through the hole, and it was dipped three times in water taken from a well on which the sun did not shine, by a young girl with red or yellow hair. The

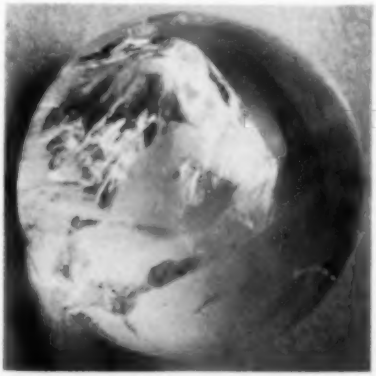

Fig. 3—Clach-na-Brataich rock crystal amulet from Perthshire, Scotland, 1830.

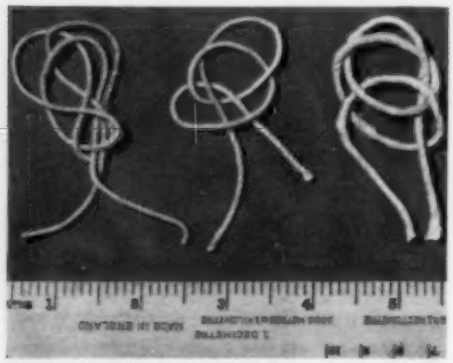

Fig. 4—Worm-knots or Snaaidon na peiste from Ireland.

water was then given as a drench to the cow.[10]

The virtue in these charm stones when used in water was dependent upon many varied and diverse conditions. The water must be taken from a stream over which the living pass and the dead are carried; it must be brought in silence and certain precautions taken in disposing of it. Usually, it was returned to the stream from which it was taken. A variant is found in the case of the *Clach-na-Brataich* or Stone of the Standard (fig. 3.), an unmounted ball of rock crystal 1¾ inches in diameter. When last used, about 1830, it was dipped in water taken from a "fairy well." Water in which this stone was dipped was considered particularly effective in stopping the progress of "an unaccountable mortality amongst cattle." In a manuscript written about 1750, we learn "they ascribe to this stone the virtue of curing diseases in men and beasts, especially diseases whose causes and symptoms are not easily discovered; and many of the present generation in Perthshire would think it very strange to hear the thing disputed."[3]

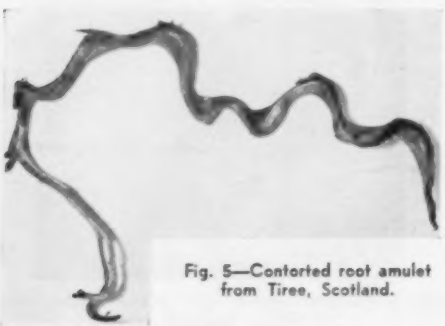

Fig. 5—Contorted root amulet from Tiree, Scotland.

"Dead water," as it was called, could also be used to find out whether a diseased animal would recover. When sprinkled over the sick animal, if she shook it off at the first sprinkling, it was an omen of renewed life; if she did not shake it off at the third sprinkling, it was a sign she would die. Worm knots or *snaaidon na peiste*, (loose knots of a special type (fig. 4) made from wool or cotton tape) were held, by certain cow doctors in Ireland, in front of and parallel with the diseased beast. The ends were pulled and if the knot came undone, which it ought to do theoretically, the beast would recover; but, if the knot jammed, the beast would die. Worm knots were also applied for curing any contortion of the bowels which was supposed to be the cause of colic.[20]

The root, naturally contorted to the shape of a snake (fig. 5), was used on the island of Tiree, Scotland, for curing grass snake bites by rubbing it over the wound.[19] In Corsock, England, a "weasel-blawn" calf, that is, a calf whose nose has swollen as the result of a supposed adder bite, was treated by killing a fowl, plucking it, and burning feathers under the calf's nose.[23]

In County Cork, Ireland, to protect cattle against disease, "muggurth" twigs of wild wormwood which had been singed in St. John's fire were suspended over the doors and windows of the cow byres.[31]

The use of fire was frequently resorted to both as a preventive and antidote to cattle disease. A fire ritual known as "raising needfire"[17] was practiced so widely that various Scottish presbyteries issued general rules for the apprehension of offenders. In March, 1649, the minister of Grange reported "the kindling of "Neidfyre" in his parish, and again in the following May eight of his parishioners appeared on this charge. All were ordered to satisfy with three days repentance in sack cloth.

There were many variations of the ritual itself. In Moray, for example, when a contagious disease broke out among the cattle, the following ceremony was enacted. All fires were extinguished in the surrounding villages.

> Then they force fire with a wheel, or by rubbing a piece of dry wood upon another, and there-

with burn juniper in the stalls of the cattle that the smoke may purify the air about them; they likewise boil juniper in water which they sprinkle upon the cattle. This done the fires in the houses were rekindled from the forced fire.

An interesting variant occurred in Mull where the fire was raised by turning an oaken wheel over nine oaken spindles from east to west. Even as late as 1850, this ritual was carried out, but with a sacrificial rite added. A murrain having decimated the cattle of a small farmer in Dallas, he proceeded to kindle the needfire with all ceremony. Then having dug a pit, he sacrificed an ox therein.

GROUP 3

The greatest variation of types of charms occurs in group 3. Manufactured articles in wood, wool, stone, and metal and prehistoric weapons such as flint arrowheads and neolithic and bronze axes were all thought to possess supernatural curative powers. The shape, material, and comparative rarity of these artifacts attracted attention and, in ignorance of their real origin and use, were explained as thunderbolts.

A neolithic ax was used by a "cow doctor" of Armoy County Antrim, about 1893. In addition to boiling the implement in the cow's food, the doctor required a loaf of bread, 6 farthings, and a half pint of whiskey. After administering the brew to the cow, he marched round and round the diseased animal, eating the bread and drinking the whiskey and repeating aloud: "A'll hae mi bite an' a'll hae mi sup, an' a'll cure the coo wi' the rotten "grup."[9] A flint arrowhead from Port Glenone, Antrim (fig. 6), and a neolithic celt from Ballymena were also used as recently as 1897 and 1899 —boiled in drinking water to cure "grup"[34] in cattle. A bronze ax (fig. 7), found hanging in a cow byre on a farm at Perth, Scotland, was used in a similar way. It was last used in 1877.[11]

Early Iron Age beads, of vitreous paste with inlaid enameled spirals, were commonly known throughout Scotland as "adder beads." They were made, according to the peasantry, by adders and were believed to be of the greatest efficacy in the cure of numerous diseases. The Scottish version of their origin is interesting and finds a close parallel in Pliny's description of the origin of the *ovum anguinum* or serpent's egg which was also endowed with similar curative powers.

Fig. 6—Neolithic flint amulet from Antrim, Ireland, 1897.

Fig. 7—Bronze flanged axe from Perthshire, Scotland, 1877.

Fig. 8—Adder-stone amulets from Lewis, Scotland.

About Midsummer Eve (tho' in the time they do not all agree) 'tis usual for snakes to meet in Companies, and that by joyning heads together, and hissing, a kind of Bubble is form'd like a ring about the head of one of them, which the rest by continual hissing blow on it till it comes off at the tail, and then it immediately hardens, and resembles a glass ring.[12]

The treatment was carried out by boiling the stones in water and giving the water, when chilled, to the animal; or simply by rubbing down with the stone the part affected.

Allied to the adder beads, and considered equally efficacious in the cure of diseases in cattle, was the adder stone which was merely the stone whorl formerly used in spinning with the distaff and spindle. The specimens shown (fig. 8) were used in Lewis as amulets for the cure of snake-bitten cattle.

It was once thought when cattle became sick, that they had been bitten by snakes and, to cure them, the adder stone was dipped in water with which the affected part was washed, or the animal was given the water to drink. Commenting on this, Thomas says: "Not the least curious circumstances connected with this superstition is the fact that there are no venomous

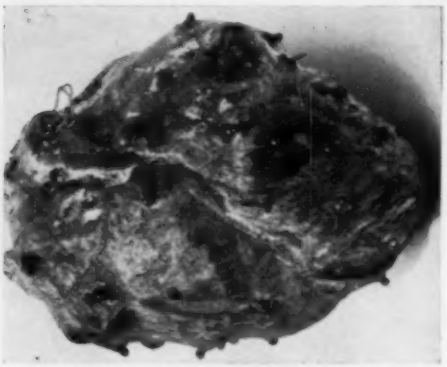

Fig. 9—Calf's heart stuck with pins from Dalkeith, Scotland, 1812.

snakes in Lewis. The blind worm is not unknown, but it is innocuous. However, the belief was held that if a sheep, for instance, were to lie down upon one of them, the wool and skin would both peel off."[29]

GROUP 4

The charms in group 4 are, for the most part, an indiscriminate blending together of a number of charms. In doing this, the "animal doctor" was probably trying to make more certain of the desired effect by changing and increasing the number of presumed active elements. For example, a cow charmer in Harris, in her treatment of a sick cow, used red yarn. Taking a ball of three-ply yarn, she wound it round the points of thumb, middle finger, and ring finger of her left hand, holding the yarn between the thumb and midfinger of her right hand. She passed a burning stick three times through a circle formed by the yarn and her fingers. She then knotted the yarn and, bringing it close to her mouth, repeated a lengthy incantation commencing "Ni mi an obair so (I do this work)." This winding, knot-tying, and chanting was repeated three times.

Commencing at one horn, she rubbed the cow down with a circular motion until she came to the other horn, and then she tied the first knot on the cow's tail, taking care to leave it out of sight; the three knots were tied one after the other to the under hairs of the cow's tail. When the cow showed signs of improvement, the first knot was taken off and burned as she chanted "An galar's easlaiunte chuiriun air mulach an teine (The disease and the illness I would put on the top of the fire)." The same performance was carried out with the second knot; but the third knot was allowed to remain on the cow's tail.[32]

Throughout western Scotland, salt was used as both cure and protective charms. A cow having contracted a disease on a croft in Kintyre was cured by the local "cow doctor." He bailed water out of a burn in three lots—first in the name of the Father, second in the name of the Son, and third in the name of the Holy Ghost. Salt was added to the water and the brew was then put into the cow's ears and over her back.[32] In the lowlands, the "cow doctor" could effect a cure by throwing a small quantity of salt into the sewer of the cow house and reciting, "God betak us to maybe they are under the earth that have as much need of it, as they that are above the earth," after which wheat bread and salt were put into the cow's ears.[29]

In north western Scotland, a favorite method of curing the swelling of the udder, or "rash" as it was called, was to place a burning peat under the udder. The teats were squeezed in succession. The smoke caused by the milk on the peat was considered medicinal. As the cow was being milked, an incantation was recited.[30]

In Suffolk, England, the remedy for a cow that had "tail-shotten," "gargot," or "red-water," or a calf suffering from dizziness, was to take a quantity of the animal's urine and boil it with nine nails from as many horseshoes. The process must start at midnight and the charmer must have an assistant to whom orders were given by signs, for not a word must be spoken. When three, five, or seven of the nails had been put in motion at once by the force of the boiling urine, the disease spirit was cast out, at which moment the cow or the calf "blared."[24]

Within this group are charms whose power derives from the ancient belief that disease could be transferred by sympathetic rites from one object to another. In isolated parts of the Highlands these charms are still used. Up to the end of the nineteenth century, when a cow died through some unknown disease, the heart, lungs, and liver were removed and buried on the land of a neighboring farmer. In this way, the disease was believed to be transferred to the neighboring farm."

Substantially the same rite was used in Mull, Scotland, where the *black spauld*, "A

mortification in the legs and a corruption of the blood, raged like a pestilence among black cattle." The heart was taken out of a beast, the affected leg was cut off and hung up in the byre, and the carcass was buried; or the first cow to contract the disease was buried alive and the remainder of the herd made to pass backward and forward over the pit.[1]

A bullock's heart pierced with large nails and thorns was found in 1892, hung up in a chimney at Chipstable, England; and, at Dalkeith, Scotland, in 1812, a calf's heart (fig. 9) was found buried in what had previously been a cow byre attached to a farmhouse. In 1812, apparently a disease had spread among the herd and the heart of one of the diseased calves was taken out, pierced with pins as it roasted over a fire, and buried.[37]

A distemper, called the "routing will," was prevalent throughout the lowlands of Scotland in 1629. The cure for this "strange and suddane diseas quhairthrow an ox was never able to ly down, bot routted continuallie till he deid," was suggested by one farmer who "had sene bestiall curet by taking one quick sick ox, and making one deip pitt, and bureing him therein, and be calling the oxin and bestiall over that place." From the record, it would appear that the farmer had tried previously to stem the epidemic by taking "one quick ox with one catt, and one grit quantitie of salt and proceeding to burie the ox and catt quick with salt in one deip hoill in the ground, as one sacrifice to the devill, that the rest of the guidis might be fred of the sickness or disease."[35]

A farmer in the Kirktown of Auchterarder, Scotland, cured "madness" by "burning a quick ox upon merches betwixt two laird's lands."[39] In 1658, a farmer brought before the Sessions of Urquhart, Scotland, was reprimanded for burying alive a young ox because his beasts were dying.[18]

There were many variants on this simple idea of transfer. At Partington, England, during the cattle plague of 1764, where distemper was particularly violent among horned cattle, the following safe and simple cure was used. Four or five onions were hung about the neck of the beast on the first day of the distemper. On the next day, four more, and so on. The onions were removed daily and buried in a deep hole.[25]

An interesting variant for the treatment of murrain is recorded for the Kilkenny district of Ireland. Here, the murrain was at one time attributed to a sting on the mouth from the larvae of a particular species of moth. The cure was to bore a hole in an ash tree and then plug it up with one of these live caterpillars.[21] As an incidental feature, the leaves of that ash tree would thenceforth be a specific against the disease. This denotes a degree of primitive reasoning which is significant; inoculation, as we know it today, was the outcome of precisely similar reasoning. The disease was transferred to the tree and the leaves of the tree containing a certain proportion of the disease were then taken to counteract the same disease.

## CONCLUSION

An examination of these charms leads to the conclusion that the number of strictly original rites involved is small. The reason underlying most of them was based on the notion of sympathetic magic in its simplest forms—similarity, imitation, and transfer by direct contact.

Curing a disease was contrived by tying around or laying a piece of wool of thread on the sick animal so that, by contact, the disease was transferred to the wool. The wool was then destroyed by burning or burying, and the disease wasted away from the sick animal as the wool rotted or was consumed in the fire.

Similarly, if the heart of a diseased beast was buried or burned, the disease would decay and disappear as the heart rotted in the ground or burned in the fire. Water in which amulets were dipped would, when sprinkled over an animal, take up the disease and convey it to the ground. The supernatural virtues of enchanted stones could be conveyed or transferred to the diseased beast directly by touch, or indirectly by dipping them in water and giving the water to the beasts as a drench.

The efficacy of these charm cures was probably governed more by the laws of coincidence than anything else. A failure could be attributed to a great many factors, such as the omission of an important detail in the ceremony, the wrong chant or the wrong kind of water, and so on. On the other hand, should the animal by chance or through stamina recover, the recovery would be accredited to the charm and, thus,

the charm would become firmly established.

Such simple modes of obtaining protection or cure could not be supposed to fall readily into disuse, but the most remarkable feature of their history is their continued use in the face of the enlightening veterinary and agricultural knowledge of succeeding ages up to the late nineteenth century. Their survival can only be due to natural conservatism or unwillingness to give up what had been traditionally sanctioned.

#### References


[1]Allardyce, A. (ed.): Scotland and Scotsman in the Eighteenth Century from the MSS of John Ramsay. 1st ed. W. Blackwood & Sons, Edinburgh (1888): 446-447.

[2]Atkinson, G. M.: On a Stone Known as the "Imokilly Amulet." J. Roy. Hist. and Arch. A. of Ireland, Dublin, *3*, (1875): 444.

[3]Bagshawe, T. W.: A Stable Charm from Hertfordshire. Folk-Lore, London, *61*, (1955): 416.

[4]Beggs, E. J.: Am Fasgadh. Folk-Lore, London, *56*, (1945): 275.

[5]Black, G. F.: Scottish Charms and Amulets. Proc. Soc. Antiquity of Scotland, Edinburgh, *27*, (1892-1893): 438-440.

[6]Black, G. F.: Scottish Charms and Amulets. Proc. Soc. Antiquity of Scotland, Edinburgh, *27*, (1892-1893): 450.

[7]Black, G. F.: Scottish Charms and Amulets. Proc. Soc. Antiquity of Scotland, Edinburgh, *27*, (1892-1893): 450-451.

[8]Black, G. F.: Scottish Charms and Amulets. Proc. Soc. Antiquity of Scotland, Edinburgh, *27*, (1892-1893): 458.

[9]Black, G. F.: Scottish Charms and Amulets. Proc. Soc. Antiquity of Scotland, Edinburgh, *27*, (1892-1893): 463.

[10]Black, G. F.: Scottish Charms and Amulets. Proc. Soc. Antiquity of Scotland, Edinburgh, *27*, (1892-1893): 473.

[11]Black, G. F.: Scottish Charms and Amulets. Proc. Soc. Antiquity of Scotland, Edinburgh, *27*, (1892-1893): 517.

[12]Camden, W.: Britannia. Gibson, E. (ed), A & J Churchil, London (1695): 683.

[13]Campbell, J. G.: Witchcraft and Second Sight in the Highlands and Islands of Scotland. 1st ed. James Maclehose & Sons, Glasgow (1902): 71.

[14]Carmichael, A.: Carmina Gadelica. 1st ed. Oliver & Boyd, Edinburgh (1900): 140-141.

[15]Cockayne, O.: Leechdoms, Wortcunning, and Starcraft of Early England. 1st ed. Longman, Green & Co. Ltd., London (1864): 291.

[16]Creighton, C.: A History of Epidemics in Britain from A.D. 664 to the Extinction of Plague. 1st ed. University Press, Cambridge (1891): 15.

[17]Davidson, T. D.: The Needfire Ritual. Antiquity, Newbury, *115*, (1955): 132-136.

[18]Davidson, T. D.: The Needfire Ritual. Antiquity, Newbury, *115*, (1955): 134.

[19]Ettlinger, E.: Documents of British Superstitions in Oxford. Folk-Lore, London, *54*, (1943): 231.

[20]Ettlinger, E.: Documents of British Superstitions in Oxford. Folk-Lore, London, *54*, (1943): 245.

[21]G. J.: To Cure Murrain in Cows. Notes and Queries, London, *1*, (1850): 349.

[22]Gregor, W.: Report of the Ethnographical Survey of the United Kingdom. Brit. A. for Advancement of Sci., London, *5*, (1897): 467.

[23]Gregor, W.: Report of the Ethnographical Survey of the United Kingdom. Brit. A. for Advancement of Sci., London, *5*, (1897): 467-468.

[24]Gurdon, E. C.: County Folk-Lore-Suffolk. Folk-Lore Society, London, *37*, (1893): 169-170.

[25]Gutch, E.: County Folk-Lore—East Riding of Yorkshire. Folk-Lore Society, London, *45*, (1901): 68.

[26]Handley, J. E.: Scottish Farming in the Eighteenth Century. 1st ed. Nelson & Sons, London (1953): 13.

[27]Hardy, J.: The Denham Tracts. 1st ed. Folklore Society, London, *2*, (1892-1895): 113.

[28]Henderson, J.: General View of the Agriculture of the County of Caithness. 1st ed. Board of Agriculture, London (1812): 204.

[29]Macdonald, A., and Dennistoun, J.: Extracts from the Registers of the Presbytery of Humbie, 1650. Maitland Club Miscellany, Edinburgh, *1*, (1834): 439.

[30]Mackenzie, A.: Gaelic Incantations, Charms and Blessings of the Hebrides. 1st ed. Courier Press, Inverness (1895): 54-55.

[31]Mackenzie, D.: The Infancy of Medicine. 1st ed. Macmillan & Co., London (1927): 164.

[32]Maclagan, R. C.: Evil Eye in the Western Highlands. 1st ed. David Nutt, London (1902): 143-144.

[33]Meechan, J.: The Cure of Elf Shooting in the North-West of Ireland. Folk-Lore, London, *17*, (1906): 200.

[34]Pitt Rivers Museum, Oxford: Personal communication, 1957.

[35]Records of Justiciary, Edinburgh: Trial of Isobel Young, Feb. 24, 1629.

[36]Sayce, R. U.: Need Years and Need Food. Montgomeryshire Collection—Trans. Powys-land Club. Montgomery, *53*, (1952-54): 67.

[37]Skene, J.: On a Popular Superstition Formerly Used to Preserve Cattle From Witchcraft. Archaeologia Scotia—Trans. Soc. Ant. of Scotland, Edinburgh, *3*, (1831): 300.

[38]Summers, M.: Geography of Witchcraft. 1st ed. Kegan Paul, Trench, Trubener & Co. Ltd., London (1927): 226.

[39]Thomas, F. W. L.: Observations Respecting Articles Collected in the Outer Hebrides. Proc. Soc. Ant. of Scotland, Edinburgh, *4*, (1860-1861): 119.


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*Avian Neurolymphomatosis.*—Contrary to the suggestion that there may be a relationship between human poliomyelitis and avian neurolymphomatosis, the lesions are quite different. Grossly, in poliomyelitis, there are only insignificant hyperemic lesions of the nervous system whereas, in the avian disease, some nerves are considerably thickened, partly due to lymphoblastic and plasmoblastic infiltration. In poliomyelitis, destruction of nerve cells is characteristic whereas, in the avain disease, the lesions are proliferative.—*Vlaams Diergeneesk. Tijdschr. (Jan., 1957)*: 3.

# Choke in Shetland Ponies, Caused by Boluses

R. L. LUNDVALL, D.V.M., M.S., and B. W. KINGREY, D.V.M., M.S.

*Ames, Iowa*

SHETLAND PONIES have increased in numbers and in popularity to a remarkable extent in the past several years. Many younger practitioners—and possibly some older ones, especially those who have not had an extensive equine practice—find some important peculiarities in the treatment of Shetland ponies. Difficulties in the oral administration of drugs, particularly boluses, are common.

For the past three years, approximately 10 ponies with esophageal obstructions due to drug boluses have been presented each year for treatment at the Iowa State College veterinary clinics.

The large size balling gun and accompanying bolus or capsule is easily passed into the mouth and pharynx of most ponies. However, a 240-gr. bolus or a No. 10 or No. 11 capsule is very apt to pass only a short distance down the esophagus before becoming lodged. This is ordinarily not serious in the case of a gelatin capsule but, if the object is a compressed bolus, the consequences are apt to be disastrous. This seems to be especially true with a purgative bolus (dihydroxyanthraquinone*) which is commonly used in the 0.5-oz. size. Compressed sulfonamide boluses in the 240-gr. size are also apt to lodge.

These boluses are hard and dry and, when one obstructs the esophagus, its hygroscopic effect tends to cause it to adhere to the mucous membranes. The bolus is not apt to soften appreciably over a period of several days, nor can it ordinarily be forced up the esophagus into the pharynx. Most affected ponies seen have died within several days due to inhalation pneumonia or dehydration, or both.

However, in several, the bolus finally was dislodged either upward or downward after a period of three or four days, and in these animals a stricture of the esophagus with accompanying dilatation above the stricture developed some time later.

From the Department of Veterinary Medicine and Surgery, Iowa State College, Ames.

*Istizin, produced by Winthrop Labs., Inc., New York, N. Y.

## CASE REPORTS

*Case 1.*—A 2-year-old Shetland filly was referred to the clinics by the attending veterinarian on May 5, 1957. The filly had been treated for colic five days previously. She had apparently swallowed one "long pill," but had struggled when given a second one. She was dehydrated and depressed and had a bilateral mucopurulent nasal exudate stained with food particles. A stomach tube could be passed only a short distance down the esophagus.

Palpation revealed an object which seemed to be lodged in the esophagus approximately 4 inches posterior to the larynx. An injection of 0.5 cc. of carbachol (Lentin**) was given subcutaneously in an attempt to stimulate salivation and esophageal movement. This was repeated in one hour. The animal was also given 500 cc. of normal saline solution, intravenously. A 14-gauge hypodermic needle was inserted through the skin and esophageal wall into the bolus in an unsuccessful attempt to break it down.

The pony died approximately 12 hours later. At necropsy, the bolus was found lodged about 6 inches from the anterior end of the esophagus, surrounded by necrotic mucosa and a periesophageal hemorrhage. Extensive inhalation pneumonia was also present.

*Case 2.*—A 4-year-old Shetland stallion was referred to the clinic on Feb. 26, 1958, also by the attending veterinarian, who had treated the pony for colic approximately three weeks previously. The "pill" that was given seemed to cause the pony considerable distress, and he was not able to eat or drink for the next several days.

When he was finally able to swallow, it was necessary to feed a gruel, since he would choke if allowed to ingest hay or straw. The condition was believed to be gradually becoming worse. There was a mucopurulent nasal discharge, stained with bits of food.

No dilatation or enlargement of the esophagus could be palpated. A stomach tube could be passed only a short distance down the esophagus. A radiograph made

**Produced by Merck & Co., Inc., Rahway, N. J.

Fig. 1—Radiograph showing barium adhering to the walls of the dilated portion (arrows) of the esophagus of a stallion; also to the contracted portion beyond.

after a barium solution had been administered revealed a constriction of the esophagus, presumably at the point where the bolus had been lodged, and above the constriction the esophagus was dilated (fig. 1).

The prognosis was poor but the owner was advised to continue to feed a gruel with the hope that the pony could be used during the breeding season.

## DISCUSSION

One possible reason why boluses are frequently used in Shetland ponies is that passing a stomach tube is difficult. A colt-size stomach tube will not pass through the nasal passages of some miniature ponies, and a stallion catheter or other soft rubber tube is too flexible to pass readily.

The use of a tranquilizer to quiet the animal facilitates passing a stomach tube and, in addition to the quieting effect, seems to relax the musculature of the pharynx and esophagus.

In many instances, a dose syringe may be preferred for administering small amounts of liquid medication. If boluses are used, they should be small, and should be well lubricated to reduce the chance of lodging in the esophagus.

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*Gastroesophageal Intussusception in a Dog.*—An extremely rare case of an intussusception of a portion of the stomach into the esophagus in a dog is described. Energetic antiperistaltic contraction of the stomach during vomiting, perhaps due to a heavy infection with intestinal parasites, was believed responsible.—*Veterinaria, 4, (1957): 627.*

*Intussusception of the Ileum in Sheep.*—After 180 yearling Merino ewes had been transported 60 miles by train and then walked 3 miles, 15 died in the next two weeks. All showed anorexia for two to four days and developed a distended abdomen before death. In all of the 11 necropsied, there was an intussusception of the ileum approximately 12 inches proximal to the ileocecal junction. In each, there were scattered nodules of *Oesophagostomum columbianum.* Similar losses and necropsy findings occurred after transportation in two other flocks. The significance of the parasites and of transportation are undetermined.—*H. D. Osborne in Austral. Vet. J. (Feb., 1958): 42.*

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*Perforation of Gastrointestinal Tract by a Porcupine Quill.*—Sharp, foreign bodies are frequently swallowed by people, yet they rarely perforate the gastrointestinal tract. Of 95 cases of perforation by sharp objects studied, 73 per cent occurred near the ileocecal junction.

Only 2 cases of perforation by a porcupine quill were found in the literature; 2 cases were added—both occurred in woodsmen. Both men had abdominal discomfort for four days which had become progressively worse at the time of laparotomy. In one, an abscess was found at the junction of the mesentery with the distal portion of the jejunum. A protruding porcupine quill was removed, the perforation was closed, and the patient recovered. He had eaten a sandwich, ten days prior to surgery, after killing a porcupine. The other man became ill shortly after eating a porcupine meat sandwich. The quill was found perforating the lesser curvature of the stomach near the pylorus. This patient died eight days after surgery.—*New England J. Med. (April 10, 1958): 746.*

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*A Nonexplosive Anesthetic.*—A potent anesthetic, a fluorinated hydrocarbon, first synthesized in England in 1951 as trifluorobromchlorethane, has been used successfully in patients of all ages and conditions. It has many advantages over ether and chloroform and, essentially, there are no adverse side effects such as nausea or vomiting. Emergence from the anesthetic is rapid.—*Sci. News Letter (April 19, 1958): 249.*

# Enzootic Pasteurellosis in Domestic Rabbits. I. Pathology and Bacteriology

KARL W. HAGEN, Jr., A.B.

*Fontana, California*

ENZOOTIC PASTEURELLOSIS in the domestic rabbit is a problem to the commercial breeder and to workers using rabbits in the laboratory. More commonly referred to as "snuffles," the disease has been recognized for some time. In a study of the etiological agent in 1914, an organism called *Brucella bronchiseptica* was isolated.[2] In 1924, it was reported that the condition was caused primarily by *Pasteurella lepiseptica*.[5-7] In 1952, it was concluded that the cause of the infection was a strain of *Past. lepiseptica*.

In a mortality study at the U.S. Rabbit Experiment Station, statistics were given on 13,915 rabbits.[3] During the years 1947 to 1949, inclusive, mortality records were kept on 2,083 litters. Pneumonia was present in 18 per cent of the animals which died when less than 56 days old. Respiratory infections were responsible for 53 per cent of the mortality in the mature animals.

The purpose of this investigation was to study the extent to which this respiratory disease is present in a commercial rabbit herd. The distribution and spread of the bacteria were studied and related to the pathological changes observed in the animals.

## MATERIALS AND METHODS

Forty-five White New Zealand does were housed in individual all-metal hutches. A standard 19 per cent protein rabbit pellet was hopper-fed, and water was furnished by a dewdrop system. A good quality sun-cured alfalfa hay was available in the hay mangers at all times.

These 45 does produced 857 young during a 20-month period. When the young were 56 days old, they were removed from the experiment.

Animals in which respiratory infection was considered the primary cause of death were recorded and the lungs, trachea, and nasal turbinates were cultured. Bacteriological cultures were made on blood agar, sodium azide blood agar, MacConkey agar, Littman oxgall agar, and Peizer TB medium. All cultures were incubated for seven days at 37 C. except the TB and oxgall agar, which were held for a minimum of 30 days. For purposes of bacteriological study, the official methods were followed.[4]

Fig. 1—Gross appearance of rabbit lungs showing consolidation due to Pasteurella multocida infection.

From the U.S. Rabbit Experiment Station, Animal Disease and Parasite Research Division, Agricultural Research Service, U.S.D.A., Fontana, Calif.

## RESULTS

A total of 35 young rabbits developed signs of respiratory infection and died within two to seven days. The clinical picture was rather constant. The animals became inactive and lethargic, their eyes became dull and lusterless, and some were affected with a diarrhea. As the infection progressed, labored breathing, emaciation, and rough fur developed. In some cases, a conjunctival exudate glued the eyelids and a nasal discharge occurred. Death was preceded by cyanosis of the ears and eyes, and a slow, gasping respiration. Five of the 45 does also died of pneumonia.

*Pathology.*—Well demarcated, reddish gray foci of a bronchopneumonia were found in the upper lobes of both lungs (fig. 1). Often, the areas of consolidation had progressed to occupy much of one entire lobe. The pleural cavity often contained a clear sanguineous fluid. The cut surface of the lung was firm and a thick exudate could be seen in the lumen of the bronchi. The trachea was inflamed and filled with a frothy, blood-stained exudate; the bronchi within the involved area contained a thick, purulent exudate (fig. 2).

Foci of infection in contact with the pleura developed into abscesses filled with white, thick pus which progressed into caseous nodules. The nasal turbinates were inflamed and frequently contained a thick, purulent exudate similar to that found in the bronchi.

Throughout the lungs there were areas in which the peribronchial alveoli were filled with an exudate of polymorphonuclear leukocytes and, occasionally, short pleomorphic bacilli. Where the pathological alveoli had coalesced, there were areas of necrosis (fig. 3). The bronchi within the involved areas contained a polymorphonuclear exudate. The histological picture was one of polymorphonuclear exudate filling the alveoli and bronchi, with subsequent necrosis of the consolidated areas.

*Bacteriology.*—Minute extracellular gram-negative rods were found in smears made from the consolidated lung tissue and they were cultivated on blood agar. Occasionally,

Fig. 2—Gross appearance of formalin-fixed lung tissue of a rabbit. Exudate in bronchi and areas of peribronchial consolidation are illustrated.

*Alcaligenes bronchiseptica* and a *beta* hemolytic *Micrococcus pyogenes* were found, but no fungi or mycobacteria were isolated from the lung tissue of these animals (table 1).

The predominant organism was a short, coccoid, bipolar-staining, gram-negative rod. It was nonmotile, nonsporeforming, and at times exhibited an indistinct capsule. Growth was abundant on blood agar but failed to appear on MacConkey or sodium azide blood agar. All strains showed a uniform pattern of biochemical activity. On a basis of morphological, cultural, and biochemical characteristics, the organism was classified as *Past. multocida.*

## DISCUSSION

Of the 857 young produced during this investigation, 35 died with respiratory infection. *Pasteurella multocida* was isolated from all 5 does which died of pneumonia, whereas in the "fryer-size" animals, it was isolated from 54 per cent. Both *A. bronchiseptica* and *M. pyogenes* were involved in the respiratory infections, but to a lesser degree than *Past. multocida.*

When 3 pregnant does were killed, three to seven days prior to the expected parturition date, Pasteurella was not isolated from the blood of the lungs and heart of the fetuses. Blood samples from the lungs and heart, pooled from 2-day-old rabbits from two litters, also failed to produce a positive culture. Positive Pasteurella isolations were made from 11-, 13-, 14-, and 17-day-old rabbits.

Since many of the mature females harbor Pasteurella in their respiratory tracts, the finding of the same organism in the lungs of their young offspring strongly suggests that natural transmission takes place via the respiratory route within a few days after birth.

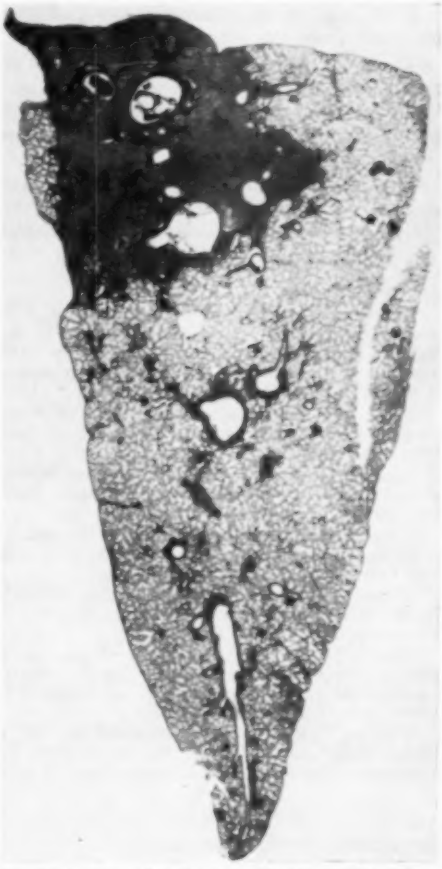

Fig. 3—Section of rabbit lung showing patchy bronchopneumonia.

## SUMMARY

1) Of the 857 young produced from 45 does during the course of this investigation, 35 developed respiratory infection and died.

2) *Pasteurella multocida,* the predominating organism, was isolated from 54 per cent of the lungs cultured. *Alcaligenes bronchiseptica* and *Micrococcus pyogenes* were also isolated, but less frequently.

TABLE 1—Distribution of Organisms Isolated from Lung Tissue of Rabbits that Died of Pneumonia

| Age of Rabbits | Total No. of rabbits | No. of deaths | Bacterial species isolated from lung tissue | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | Past. multocida | | A. bronchiseptica | | M. pyogenes | |
| | | | (No.) | (%) | (No.) | (%) | (No.) | (%) |
| Under 21 days of age | ..... | 14 | 8 | 57.1 | 4 | 28.6 | 2 | 14.3 |
| Over 21 days of age | ..... | 21 | 11 | 52.3 | 6 | 28.5 | 4 | 19.2 |
| Total | 857 | 35 | 19 | 54.3 | 10 | 28.5 | 6 | 17.2 |
| Mature does | 45 | 5 | 5 | 100.0 | 0 | ..... | 0 | ..... |

3) Fungi or mycobacteria could not be cultured from the infected lung tissues.

4) The lungs presented a picture of bronchopneumonia, with consolidation and necrosis. The trachea was inflamed, and the bronchi were filled with a thick, purulent exudate.

5) Experimental studies suggest that natural transmission is from mother to offspring, via the respiratory route, within a few days after birth.

**References**

[1]Alexander, Mary M., Sawin, Paul B., and Roehm, Dorothy A.: Respiratory Infection in the Rabbit: An Enzootic Caused by *Pasteurella Lepiseptica* and Attempts to Control It by Vaccination. J. Infect. Dis., *90*, (1952): 30-33.

[2]Ferry, N. S.: Bacteriology and Control of Acute Infections in Laboratory Animals. J. Path. and Bact., *18*, (1914): 445-455.

[3]Lund, Everett E.: Mortality Among Hutch-Raised Domestic Rabbits. U.S. Dept. Agric. Circ. 883, 1951.

[4]Society of American Bacteriologists: Manual of Methods for Pure Culture Study of Bacteria. Biotech Publications, Geneva, N.Y., 1947.

[5]Webster, Leslie T.: The Epidemiology of a Rabbit Respiratory Infection. I. Introduction. J. Exptl. Med., *39*, (1924): 837-841.

[6]Webster, Leslie T.: The Epidemiology of a Rabbit Respiratory Infection. II. Clinical, Pathological, and Bacteriological Study of Snuffles. J. Exptl. Med., *39*, (1924): 843-856.

[7]Webster, Leslie T.: The Epidemiology of a Rabbit Respiratory Infection. III. Nasal Flora of Laboratory Rabbits. J. Exptl. Med., (1924): 857-877.

## Erysipelas in Chickens

Erysipelas in chickens is rare, the only reports in North America being of one flock from Nebraska, two each from New York and New Jersey, and four in Ontario. Most of the birds were over 6 months old and deaths were usually sudden with mortality up to 65 per cent.

In a flock of 250 hens, about 9 months old, in Alberta, 25 birds had died in ten days and egg production had dropped to 50 per cent of normal. The birds usually died after being droopy for a few hours. In 2 of 3 birds necropsied, there were several flaccid, misshapen ova and the liver and spleen were enlarged and congested. One bird had many petechiae on the epicardium.

Prior to diagnosis, the flock was given oxytetracycline in the drinking water (0.4 Gm./gal.) for four days but mortality increased to approximately 25 per day. All survivors were then given intramuscular injections of penicillin, first in aqueous and 24 hours later in an oil solution (total 300,000 U./bird). No more birds sickened but no visibly ill birds recovered although they seemed to live longer.

The disease was prevalent in swine in the district but did not occur in swine on this farm although they were separated from the affected flock by only a wire fence.—*H. N. Vance and G. R. Whenham in Canad. J. Comp. Med. and Vet. Sci. (March, 1958): 86.*

[That none of the sick birds recovered when given penicillin seems strange when the remarkable recovery of affected swine and the large doses given the birds are considered. The same doses of penicillin usually resulted in complete recovery of acutely ill 100-lb. shoats, and recovery occurred in approximately as many hours as they had been ill.—W.A.A.]

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*Fluorosis in Cattle.*—A number of cattle in the vicinity of an aluminum factory, in southern Germany, were suffering from slight to serious osteomalacia. Control measures recommended included: removal of affected cattle and placing, in these pastures, healthy cattle near the end of their economic utility; feeding aluminum sulfate (10 times the quantity of fluorine ingested) with extra calcium, phosphorous, and vitamins A and D; and additional NaCl where necessary. Greater attention should be paid to exhaust gases.—*Tijdschr. Diergeneesk. (March, 1958): 189.*

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*Fecal Flora of Normal Cows.*—In a study of 18 stable cows (winter) and 19 grazing cows (summer), all of them on balanced rations, *Escherichia coli* was constant and abundant but types associated with calfhood gastroenteritis were not found. There were variable numbers of Proteus species but no Salmonella and Shigella. *Streptococcus fecalis* was never present but *Streptococcus fecium* was constant and *Streptococcus bovis* was found occasionally.

*Clostridium butyricum*, which was present in ensiled fodder, was abundant from stable cows but disappeared in summer. *Clostridium perfringens* was never found. Micrococci were present in all specimens but *Staphylococcus aureus* was rare.—*Ann. Inst. Pasteur (March, 1958): 332.*

# Perineal Hypospadias in Male Lambs

L. Z. McFARLAND, D.V.M.

*Davis, California*

HYPOSPADIAS, as it occurs in the male, is a congenital anomaly of the external genitalia, characterized by a urethra which opens at some point along the ventral aspect of the penis or in the perineum.

Forms of male hypospadias include (1) balanitic, in which the urethral opening occurs in the region of the glans penis, (2) penile, in which the urethra opens ventrally proximal to the glans penis and distal to the scrotum, (3) scrotal, in which the urethra opens at the scrotum or between the halves of a divided scrotum, and (4) perineal, in which the urethra opens in the perineum.

In the last type, the urethral orifice is so situated as to resemble a vulva and, with the usual presence of a scrotum and penis, the animal may be mistaken for a hermaphrodite. Hypospadias is considered a form of pseudohermaphrodism.

This is a report of perineal hypospadias in 2 young rams.

## MATERIALS AND METHODS

Two lambs which appeared to be hermaphrodites were embalmed and dissected. It was observed that lamb A,* a Rambouillet-type, had abnormal male genitalia at the time of docking when 2 weeks old. Lamb B,* which died when 3 days old, was a Targhee-Rambouillet cross, twin to a normal appearing male lamb.

## ANATOMICAL FINDINGS

A sketch (fig. 1) shows the general appearance of both lambs.

*Lamb A.*—The anal opening was located about 3 cm. below the base of the tail, and 1 cm. below the anus was an orifice approximately 1 mm. in diameter through which urine was voided. From this urethral orifice a reddish groove in the skin, 3 mm. in width, extended anteriorly on the midline between the halves of a cleft scrotum and along the ventral surface of the penis to terminate in the region of the glans penis. The prepuce was developed but had not united ventrally to form the preputial raphe.

Wool covered each half of the divided scrotum. The testes, which had descended into their respective scrotal sacs, and the epididymides, deferential ducts, and spermatic cords were normal. The deferential ducts terminated normally at the pelvic urethra. No seminal vesicles were visible.

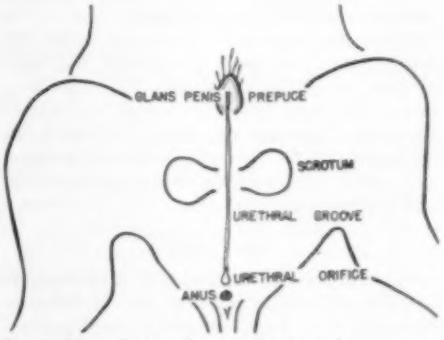


Fig. 1—Ventral view showing the typical appearance of the external genitalia in a ram with perineal hypospadias.

The bladder was small. The pelvic urethra continued posteriorly from its origin and terminated at the ischial arch as a small orifice which was surrounded by a urethral muscle.

The prostate, bulbo-urethral glands, penile attachment, and associated penile muscles were normal. The corpus cavernosum penis constituted the body of the penis and the corpus cavernosum urethrae and penile urethra were absent. The glans penis was a small, pointed mass of tissue 1 cm. in diameter and 2 cm. in length. The urethral process was absent. The protractor and retractor preputial muscles and the retractor penile muscles were present. A definite sigmoid flexure of the penis was absent.

*Lamb B.*—The external appearance corresponded to figure 1, except that no anus was found. Urine and small quantities of

From the School of Veterinary Medicine, University of California, Davis.

*The author thanks Dr. Blaine McGowan for supplying lamb A, and the Animal Husbandry Department, University of California, Davis, for supplying lamb B.

fecal material could be expressed through a small orifice situated 3 cm. below the base of the tail.

A cleft scrotum and reddish groove in the skin resembled those of lamb A. This groove terminated at the glans penis which was a bulblike mass of tissue 2 cm. in diameter and 2 cm. in length.

In other respects, the genital organs resembled those of lamb A except: (1) The bulbocavernosus and retractor penile muscles were absent; (2) the seminal vesicles were 1 cm. in length and opened anterior to the terminations of the deferential ducts; and (3) just prior to its termination, the urethra formed a fistula with the rectum, which resembled the primitive cloacal formation of the early embryo.

The anal sphincter muscles were observed, but the anal plate had not perforated, resulting in atresia ani. The urorectal opening was too small to permit adequate passage of fecal material, as evidenced by the greatly distended rectum and colon, which undoubtedly contributed to the lamb's death.

## DISCUSSION

The embryological basis of hypospadias is a failure of the internal genital folds to unite so as to complete the ventral portion of the urogenital sinus and form the penile urethra.[3] The urogenital sinus develops as the terminal part of the allantoic cavity and it forms a groove on the ventral surface of the phallus. The urogenital sinus (urethral groove) continues to grow with the phallus, which develops the definitive penis. Thus, a failure of the internal genital folds to unite can occur at any point from perineum to glans penis and can result in a failure of the external genital folds to join and form the median raphe of the scrotum, penis, and prepuce.

Hypospadias has been reported in dogs,[1,6] sheep,[2,4,9] and cattle.[5,7,8] The only report of a scrotal hypospadias encountered was in a 3-year-old bull[7] which had a cleft scrotum, and urine voided through a 5-cm. orifice at its base. The testes had not descended and the prepuce was not fused.

Penile hypospadias, with arrested development of the penis, has been reported in Boston Terriers.[6] Perineal hypospadias has been reported in rams 3½ months old[4] and 18 months old,[9] and in a Karakul lamb.[2] All 3 cases resembled the 2 reported here, except for the atresia ani and urorectal fistula in lamb B.

## SUMMARY

Perineal hypospadias is reported in 2 lambs. This condition is characterized by a cleft scrotum, descended testes, a urethral orifice situated in the perineum just ventral to the anal region, a penis which lacks the penile urethra, corpus cavernosum urethrae, and urethral process. The urogenital sinus (urethral groove) persists as a reddish groove in place of the median raphe of the scrotum, penis, and prepuce.

### References

[1]Bloom, F.: Pathology of the Dog and Cat. American Veterinary Publications, Inc., Evanston, 1954.

[2]Eaton, O. N.: An Anatomical Study of Hermaphrodism in Goats. Am. J. Vet. Res., *4*, (1943): 333.

[3]Keith, Sir Arthur: Human Embryology and Morphology. 5th ed. Edward Arnold & Co., London, 1933.

[4]Pearl, R.: A Case of Hypospadias in a Ram. Am. Vet. Rev., *40*, (1911-1912): 794.

[5]Raust, R.: Hypospadias vulviforme chez un bovide adulte. Rec. méd. vét., *115*, (1939): 344.

[6]Roberts, S. J.: Veterinary Obstetrics and Genital Diseases. Published by the author, Ithaca, N.Y. 1956.

[7]Robles, M.: Hypospadias in a Bull. J.A.V.M.A., *77*, (1930): 375.

[8]Sumulong, M. D.: Hypospadia in a Carabao Bull. Philippine J. Anim. Indust., *2*, (1935): 243.

[9]van Drimmelen, G. C., and Thiel, A. R.: Hypospadias in a Merino Ram. 18th Rep., Director, Veterinary Services and Animal Industry, Union of South Africa, (1932): 1063.

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*Effect of Air Temperatures on Gains in Swine.*—In 24 experiments in California, involving 94 hogs (367 data observations), with temperatures varying from 40 to 110 F., there was a significant correlation between the temperature and weight gains. The daily gain was at a maximum when the air temperatures were constant at 61 F. for 350-lb. hogs, and at 73.5 F. for 100-lb. shoats.—*J. Anim. Sci. (Feb., 1958): 62.*

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*Salmonellosis in Cattle.*—When 10 of 30 cattle, in France, developed an acute enteritis and 2 died, an unusual strain of *Salmonella dublin* was isolated from the intestine of the 2 animals. A severe infection of intestinal parasites was believed to have provided the portal of entry of infection. Treatment with an autogenous vaccine proved effective.—*Rec. méd. vét., d'Alfort (Feb., 1958): 93.*

# Toxic Effect of Chlorinated Naphthalenes in Pigs

R. P. LINK, D.V.M., Ph.D.; JEAN C. SMITH, D.V.M., M.S.;
D. I. NEWTON, D.V.M.

*Urbana, Illinois*

THE SKIN LESIONS of bovine hyperkeratosis as described in 1947[6] closely resembled those first described in 1871[5] among Scottish workers handling crude paraffin.

It has been demontrated[1,7,8] that chlorinated naphthalenes and certain lubricants containing these compounds will produce hyperkeratosis when administered orally to cattle. It was also found that used crankcase oil containing chlorinated naphthalene, when applied to the skin of a cow, produced lesions characteristic of this disease.[8]

It was observed[3] that during the development of hyperkeratosis, experimentally induced by giving a feed which contained a hyperkeratogenic substance, the plasma vitamin A dropped to low levels and remained low. Some of the lesions observed in this condition were similar to those caused by vitamin A deficiency.

The susceptibility of swine to the toxic effect of chlorinated naphthalenes has not previously been reported.

## MATERIALS AND METHODS

This study was made to determine the susceptibility of swine to the systemic toxic effect of hexachloronaphthalene, when given orally in a vegetable oil solution, and the effect of dermal application of mineral oil containing pentachloronaphthalene.

The chlorinated naphthalene used for systemic toxicity studies contained 62 per cent chlorine (essentially hexachloronaphthalene). It was put into a 10 per cent solution in corn oil and administered orally in gelatin capsules. The dosage was 5 to 10 mg. per pound of body weight at the start of the experiment. Some pigs were given the capsules daily—others on alternate days. Three trials were conducted.

*Trial 1.*—Five swine which weighed 160 to 180 lb. were each given a total of 50 mg./lb., while 3 of similar weight were not treated.

*Trial 2.*—Five pigs which weighed 34 to 55 lb. were given total doses ranging from 60 to 100 mg./lb. Two other pigs were sprayed daily except Sunday for four weeks with a light-weight lubricating oil which contained 6 per cent pentachloronaphthalene (57% chlorine). Total chlorine content of the oil was 3.49 per cent. Each pig was sprayed with a total of approximately 3,000 ml. of oil. Two similar pigs were not treated.

*Trial 3.*—Seven pigs weighing 33 to 64 lb. were given 80 or 90 mg./lb. and 3 were not treated.

The pigs were housed in a building with a concrete floor. A complete swine ration fortified with vitamins and trace minerals was fed. The amount of added vitamin A was 400 units per pound of feed.

Blood for vitamin A assay was collected from each pig before administration of chlorinated naphthalene was initiated—and 14 days after the initial dose. Additional blood samples were collected from some pigs at irregular intervals. Plasma vitamin A determinations were made by the Kimble[3] method, which is based on the antimony trichloride reaction.

## RESULTS

Swine weighing 160 to 180 lb., which were given 50 mg./lb. of hexachloronaphthalene, showed no reaction. There was no significant change in the plasma vitamin A, and weight gains were normal. Gross and microscopic examination of kidney and liver tissues from these animals did not reveal significant changes in these organs. This dosage apparently was not toxic to pigs of these weights (table 1).

In the second trial, 7 pigs weighing 34 to 55 lb. were given total doses of hexachloronaphthalene ranging from 60 to 100 mg./lb. Pigs given 90 or 100 mg./lb. died or became moribund and were killed. The 1 given 80 mg. was retarded in growth although it continued to eat well. There was a reduction in the plasma vitamin A in all pigs at 14 days, but only those given 70 mg./lb., or more, developed vitamin A values in the deficiency range. Those which survived had plasma vitamin A values in the normal range at 35 days (table 2).

The 2 pigs sprayed with the mineral oil solution of pentachloronaphthalene did not show any systemic reaction. The only gross or microscopic lesion was a slight hyperkeratosis of the skin. There was no apparent effect on weight gains or on plasma vitamin A.

Pigs in trial 3 weighed 33 to 64 lb. Two were given 80 mg. and 5 were given 90 mg./lb. of chlorinated naphthalene. Pig 372, given 80 mg., did not appear to be fatally poisoned. It gained only 3 lb. in 40

From the College of Veterinary Medicine, University of Illinois, Urbana.

TABLE 1—Effect of Oral Administration of Hexachloronaphthalene to Pigs

| Pig No. | Weight (lb.) | | Chlorinated naphthalene | | Days to necropsy* | Plasma vitamin A (μg./100 ml.) | |
|---|---|---|---|---|---|---|---|
| | Initial | Necropsy | Total mg./lb. | Days given | | Initial | 14 days |
| 1 | 165 | 220 | 50 | 10 | 52 † | 23.1 | 22.6 |
| 3 | 180 | 235 | 50 | 10 | 52 † | 25.3 | 27.3 |
| 4 | 175 | 225 | 50 | 10 | 52 † | 18.7 | 20.6 |
| 5 | 160 | 205 | 50 | 10 | 52 † | 21.4 | 19.9 |
| 7 | 180 | 230 | 50 | 10 | 52 † | 26.0 | 24.3 |
| 8 | 170 | 235 | 0 | — | 52 † | 29.5 | 27.3 |
| 9 | 165 | 215 | 0 | — | 52 † | 20.6 | 25.0 |
| 10 | 175 | 225 | 0 | — | 52 † | 24.8 | 23.6 |

*Days after initial dose of chloronaphthalene; †killed.

days and there was only slight depression of the plasma vitamin A. The other pigs died or were killed when moribund (table 3).

Lacrimation, nasal discharge, salivation, red areas on the oral mucosa and gums, and signs characteristic of chloronaphthalene toxicity in cattle were not observed in any of the pigs. Depression and anorexia were observed 48 to 72 hours before the pigs became moribund. Diarrhea was apparent in only 1 pig.

Gross lesions observed in the fatally poisoned pigs were swelling and hemorrhage in the liver, mild gastritis, slight thickening of the intestinal wall, edema of the eyelids in some animals, and swelling of the epididymides. Livers of some animals were swollen and showed yellow discoloration without evidence of hemorrhage.

The plasma vitamin A did not remain low after administration of chlorinated naphthalene was discontinued. There was a temporary drop into the deficiency range 14 days after the initial dose in the pigs given 70 mg./lb., or more. However, it did not remain in the deficiency range and pigs which were severely poisoned later had plasma vitamin A values in the normal range.

## DISCUSSION

Swine appear to be more resistant to the toxic effect of chlorinated naphthalene than calves. It was reported[2] that 2.5 mg./lb. of hexachloronaphthalene produced hyperkeratosis and fatal poisoning in the calf. The minimum fatal dose for the pig in this study was 80 mg./lb.

Hexachloronaphthalene (50 mg./lb.) did not have any observable effect on swine weighing 160 to 180 lb. However, 60 mg. did temporarily lower the plasma vitamin A in a 34-lb. pig This suggests that age influences the susceptibility of swine to the toxic effect of this compound, as it also does cattle.

Local application to the skin of a lubricant containing chlorinated naphthalene, for a limited time, did not produce any observable systemic effect and only a slight hyperkeratosis of the skin.

It has been reported[7] that the application of 2,000 ml. of oil to the back of a cow produced an advanced case of hyperkeratosis. Two calves which nursed the cow during the period the oil was applied also became affected with severe cases of the disease. The chlorinated naphthalene content of the oil was not reported.

The pig also appears to be very resistant to the toxic effect of chlorinated naphtha-

TABLE 2—Effect of Oral Administration and Dermal Application of Chloronaphthalenes to Pigs

| Pig No. | Weight (lb.) | | Chlorinated naphthalene | | Days to necropsy* | Plasma vitamin A (μg./100 ml.) | | |
|---|---|---|---|---|---|---|---|---|
| | Initial | Necropsy | Total mg./lb. | Days given | | Initial | 14 days | Final |
| 269 | 34 | 51 | 60 | 8 | 36 † | 31.4 | 17.4 | 26.7 (35 da.) |
| 270 | 55 | 73 | 70 | 9 | 37 † | 28.7 | 6.1 | 23.2 (35 da.) |
| 271 | 52 | 68 | 80 | 10 | 37 † | 24.3 | 8.8 | 22.0 (35 da.) |
| 272 | 44 | 61 | 90 | 10 | 26 ‡ | 26.7 | 7.2 | ..... |
| 273 | 39 | 52 | 100 | 10 | 26 ‡ | 25.3 | 5.4 | ..... |
| 274 | 59 | 118 | 3,050** | 28 | 58 † | 29.5 | 31.2 | 28.4 (58 da.) |
| 275 | 48 | 107 | 3,750** | 28 | 58 † | 32.0 | 30.5 | 29.6 (58 da.) |
| 276 | 35 | 102 | 0 | ..... | 64 † | 30.4 | 28.4 | 27.5 (64 da.) |
| 277 | 46 | 109 | 0 | ..... | 64 † | 25.1 | 29.8 | 24.4 (64 da.) |

*Days after initial dose of chloronaphthalene; **sprayed with chloronaphthalene solution; †killed; ‡died.

TABLE 3—Effect of Oral Administration of Hexachloronaphthalene to Pigs

| Pig No. | Weight (lb.) Initial | Weight (lb.) Necropsy | Chlorinated naphthalene Total mg./lb. | Chlorinated naphthalene Days given | Days to necropsy* | Plasma vitamin A (µg./100 ml.) 14 days | Plasma vitamin A (µg./100 ml.) Initial | Plasma vitamin A (µg./100 ml.) Final |
|---|---|---|---|---|---|---|---|---|
| 319 | 33 | 37 | 80 | 8 | 40 ** | 7.2 | 23.4 | ..... |
| 372 | 35 | 38 | 80 | 8 | 40 † | 9.1 | 19.7 | 17.2 (40 da.) |
| 318 | 39 | 42 | 90 | 9 | 35 ‡ | 6.9 | 24.3 | 25.3 (33 da.) |
| 320 | 38 | 40 | 90 | 9 | 35 ‡ | 4.8 | 31.1 | 32.4 (35 da.) |
| 322 | 37 | 35 | 90 | 9 | 35 ** | 8.8 | 27.6 | 24.4 (30 da.) |
| 325 | 44 | 43 | 90 | 9 | 33 ** | 5.7 | 20.8 | 22.9 (30 da.) |
| 371 | 44 | 47 | 90 | 9 | 31 ‡ | 6.5 | 25.2 | 29.8 (31 da.) |
| 323 | 52 | 123 | 0 | ..... | 52 † | 22.7 | 19.2 | 28.7 (52 da.) |
| 324 | 64 | 125 | 0 | ..... | 52 † | 24.4 | 27.3 | 22.4 (52 da.) |
| 369 | 46 | 101 | 0 | ..... | 52 † | 23.3 | 21.2 | 26.3 (52 da.) |

*Days after initial dose of chloronaphthalene; **died; †killed; ‡killed in moribund state.

lene when applied to the skin. The reduced gain in body weight and the presence of vitamin A in the ration may partially explain the essentially normal plasma vitamin A in the fatally poisoned pigs.

## SUMMARY AND CONCLUSIONS

In three trials, swine weighing 33 to 180 lb. were given, orally, over eight to ten days, hexachloronaphthalene in a corn oil solution in total dosage of 50 to 100 mg. per pound of body weight. Two pigs were sprayed repeatedly with an oil solution of pentachloronaphthalene.

A total of 50 mg./lb. did not cause depression of the plasma vitamin A; 60 mg./lb. caused some depression of the vitamin A but not into the deficiency range; 70 mg./lb. caused marked depression of vitamin A but not fatal poisoning; 80 mg./lb. caused fatal poisoning in 1 of 3 (33%) of the pigs; and 90 and 100 mg./lb. fatally poisoned all 6 pigs.

Signs characteristic of chloronaphthalene toxicity in cattle were not observed. In the fatally poisoned pigs, depression and anorexia were observed until 48 to 72 hours before the pigs became moribund.

Swine are more resistant to the toxic effect of chlorinated naphthalene than cattle.

References

[1]Bell, W. B.: The Production of Hyperkeratosis by the Administration of a Lubricant. Virginia J. Sci., *3*, (1952): 71-78.

[2]Bell, W. B.: The Relative Toxicity of the Chlorinated Naphthalenes in Experimentally Produced Bovine Hyperkeratosis (X-Disease). Vet. Med., *48*, (1953): 135-140.

[3]Hansel, W., McEntee, K., and Olafson, P.: The Effect of Two Causative Agents of Experimental Hyperkeratosis on Vitamin A Metabolism. Cornell Vet., *41*, (1951): 367-376.

[4]Kimble, M. S.: Photocolorimetric Determination of Vitamin-A and Carotene in Human Plasma. J. Lab. and Clin. Med., *24*, (1939): 1055-1065.

[5]Ogston, O.: On the Local Effects of Crude Paraffin. Edinburgh Med. J., *17*, (1871-1872): 544-547.

[6]Olafson, P.: Hyperkeratosis (X-Disease) of Cattle. Cornell Vet., *37*, (1947): 277-291.

[7]Sikes, D., Wise, J. C., and Bridges, M. E.: The Experimental Production of "X-Disease" (Hyperkeratosis) in Cattle with Chlorinated Naphthalenes and Petroleum Products. J.A.V.M.A., *121*, (1952): 337-344.

[8]Sikes, D., and Bridges, M. E.: Experimental Production of Hyperkeratosis (X-Disease) of Cattle with a Chlorinated Naphthalene. Science, *116*, (1952): 506-507.

## Treatment of a Swine Dysentery

A form of vibrionic enteritis, characterized by: (*a*) rapidly spreading diarrhea which later becomes blood tinged; (*b*) chronicity with only slight fever; and (*c*) with little tendency toward spontaneous recovery and a relatively high mortality, is common in pigs 8 to 14 weeks old in Ontario. Occasionally the pigs develop a septicemia and die without typical diarrhea.

Since individual treatment is difficult and affected pigs eat little but have an increased thirst, medicated drinking water is the preferred method of treatment.

Four herds, in which the diagnosis was confirmed by finding large numbers of Vibrio in smears made from the hemorrhagic small intestines, were treated with nitrofurazone (330 Gm. furacin water-mixed/40 gal. drinking water) for seven days with good results.—*C. K. Roe and W. G. Drennan in Canad. J. Comp. Med. and Vet. Sci. (March, 1958): 97.*

## Correction—Feed Additives and Enterotoxemia in Lambs

In the abstract, "Feed Additives Fail to Control Enterotoxemia in Lambs," in the June 1, 1958, JOURNAL (p. 496), Dynafac was erroneously stated to be a product of the American Cyanamid Co. It is produced by Armour and Co., Chicago.

# Editorial

## The "Philadelphia Story" of the AVMA—104 Years Later

This issue of the JOURNAL with its preview of the annual meeting in Philadelphia next month presents an opportunity to recall some recorded but largely ignored past history of the American Veterinary *Medical* Association. The emphasis on the "Medical" in the Association's name, in connection with its 95th Meeting, is that the shades of the long-departed Robert Jennings of New Jersey and Isaiah Michener of Pennsylvania might well rise up to ask, "*95th* annual meeting? This, by rights is the *104th* meeting of the national association which we and others founded right here in Philadelphia in 1854!"

And, but for a slip in naming that association the "American Veterinary Association," plus some officially ignored historical facts, the shades of Jennings and Michener would be right in asking that question. All of which is simply to say that Philadelphia occupies a special place not only in the early history of our country and its government but also in the origin and history of what is, today, the AVMA. If proof is wanted, consider the following facts which the late Dr. L. A. Merillat, one-time association secretary, later executive secretary, and then editor of its publications, set down in his "Historical Sketches and Memoirs" several years ago.*

1) On May 7, 1854, Robert Jennings and Isaiah Michener, veterinary practitioners of New Jersey and Pennsylvania, respectively, called a meeting in Philadelphia of veterinarians, most of whom were from Pennsylvania, New Jersey, and Delaware. The group founded the "American Veterinary Association." The event was considered noteworthy by the Pennsylvania Society of Agriculture, early sponsor of formal agricultural education in this country, so the Society, at its exhibition in September, 1854, awarded the newborn AVA a silver medal for its collection of anatomical and pathological specimens.

2) In 1859, Jennings and Michener began to feel that the jurisdiction of the AVA should be expanded beyond its three-state boundaries. Then in April, 1863, a meeting was held in Philadelphia to make plans for a meeting in New York City to accomplish that purpose. The Philadelphia group adopted a resolution directing Secretary Jennings to invite practitioners from adjacent states to the "ninth annual AVA meeting in New York."

The resolution read: *Resolved* that the friends of veterinary science favorable to maintaining a national veterinary association for the advancement and diffusion of veterinary knowledge meet in convention in New York City, Tuesday, June 9, 1863, and be it further

*Resolved* that veterinary surgeons in all parts of the United States and all persons favorable to such an organization, be invited to attend the convention.

3) The New York meeting was attended by some 40 veterinarians from Maine, Massachusetts, New York, New Jersey, Pennsylvania, Delaware, and Ohio. Its minutes indicated that it was the 1863 meeting of the American Veterinary Association but the name of the organization was changed to United States Veterinary Medical Association "in regular parliamentary fashion." Some years later, the name was changed again, this time to the present one. This action took place at the annual meeting in Omaha in 1898. So, if we recognize the AVA as a "legitimate ancestor," the AVMA has had three names:

American Veterinary Association — 1854-1863
United States Veterinary Medical Association—1863-1898
American Veterinary Medical Association—1898-

*How many AVMA meetings have been held in Philadelphia?* While we are at it, we might as well record the Association's six previous meetings in the city where it had its beginnings, recognized or not:

1854 — May 7
1876 — September 20
1894 — September 18-20
1908 — September 8-11
1918 — August 19-22
1927 — September 13-16

So, the convention in Philadelphia this year will go in the records as the 95th annual meeting of the Association instead of the 104th, as it might have been except for the vagaries of history and the notions of historians. It is well that this is so—otherwise we missed celebrating the "centennial" of the AVMA four years ago!

*Published in installments in the JOURNAL, beginning with the June, 1946, issue and running through the December, 1947, issue.

## ABSTRACTS

### Influence of Diet on Ascaris Suum in Pigs

Although *Ascaris suum* has a direct life cycle, adult ascarides do not always result when embryonating eggs are fed to pigs. Evidence indicates that the ration of the pig host influences the number of ascarides which become established in the small intestine.

In five experiments, 17 pigs were fed infective eggs of *A. suum* while being maintained on a ration of rolled oats and water. The pigs were examined for worms between 22 and 75 days postinfection and all but 1 harbored ascarides, the average burden being 139 worms.—[*G. W. Kelley, L. S. Olsen, and A. B. Hoerlein: The Influence of Diet on the Development of Ascaris Suum in the Small Intestines of Pigs. Am. J. Vet. Res., 19, (April, 1958): 401-404.*]

### Escherichia Coli and Chronic Respiratory Disease of Poultry

Certain types of *Escherichia coli* are important complicating factors in chronic respiratory disease and other respiratory diseases. The aerosol route appears to be the easiest route of infection and is probably most important naturally.

At certain periods in the course of respiratory diseases, chickens or turkeys are more susceptible to *Esch. coli* aerosols. These periods are characterized by increased lymphoid proliferation in the respiratory tract lesions. At the periods of greatest susceptibility, small numbers of *Esch. coli* bacteria in an aerosol can produce pericarditis, and increasing the concentration of *Esch. coli* in the aerosol does not increase the incidence of pericarditis. The injection of as few as seven *Esch. coli* bacteria into the air sac can result in infection.

The incidence of pericarditis can be increased by adding India ink, pleuropneumonia-like organisms propagated in yolk or medium, infectious bronchitis virus, or Crawley virus to the inoculum, or by increasing the concentration of *Esch. coli* bacteria. Salpingitis is a serious, long-lasting complication which follows *Esch. coli* infection of the left greater abdominal air sac.—[*W. B. Gross: Symposium on Chronic Respiratory Diseases of Poultry. II. The Role of Escherichia Coli in the Cause of Chronic Respiratory Disease and Certain Other Respiratory Diseases. Am. J. Vet. Res., 19, (April, 1958): 448-452.*]

## FOREIGN ABSTRACTS

### Tissue Culture Study of Antibodies

Cultivation of aftosa virus in tissue culture has great possibilities for the continuous study of immunization. This method is simple and permits numerous tests so that statistical studies of immunity can be made. The simplicity and low cost is especially useful in the study of polyvalent vaccines.—[*C. Mackowiak and R. Lang: Use of Tissue Culture Titration of Foot and Mouth Disease Virus and the Study of Antibodies. Bull. Off. internat. Epizoot., 49, (1958): 99-105.*]—J. P. SCOTT.

## BOOKS AND REPORTS

### Advances in Veterinary Science

This is the third in a series of multiple-author compilations. The reception of the preceding volumes is a clear indication that the series is finding favor toward accomplishing the objective of summarizing and reporting the progress in the more active fields of veterinary medical research. The advisory board, composed of eight men of international repute, assisted the editors in choosing the areas of active research reported in this issue and have suggested possible contributors.

This volume contains nine sections: anesthesiology; diseases of the central nervous system and comparative neuropathology; brucellosis eradication; brucellosis in goats and sheep; swine brucellosis; helminthic diseases; antinematodal drugs; artificial insemination; and clostridial diseases of animals. The content of each section is well authenticated. Of the 579 pages of the volume, 92 are bibliography. However, the authors have been careful to avoid reference to repetitive material. One value of a publication of this nature is that it brings together in one place comprehensive reviews of all the newer things that have been accomplished in the fields represented.

The work is more than a review of the literature. There are ten authors representing six different countries. Each is outstanding in his field. The editors have allowed them sufficient latitude for expression of their views that the background and thinking of each is revealed in his presentation. The international aspect not only adds to the interest but emphasizes the widespread need for veterinary research and service.

The editors deserve much credit for doing a difficult job exceedingly well. The obstacles which arise from the wide geographical distribution of the contributors, the diversity of their backgrounds and interests, and the lack of uniformity in approach and presentation have been overcome with pleasing results. This reader is favorably impressed with the worthiness of their effort.

This work should be well received. It has much of factual material for those in the field of education; a stimulus and guide for those engaged in research; a help to the progressive, alert individuals in large animal practice; and the sections on anesthesiology and diseases of the central nervous system can be especially helpful to those in small animal practice. The publishers are to be congratulated upon their contributions. The paper is good, the type pleasing, and the mechanical work excellent.—[*Advances in Veterinary Science. By C. A. Brandly and E. L. Jungherr, editors. Vol. 3. 579 pages; illustrated. Academic Press, Inc., New York, N. Y. 1957. Price $13.00.*]—C. H. COVAULT.

# THE NEWS

## United States and Soviet Union to Exchange Observers in Agricultural Fields—Veterinary Science Included

The U.S. Department of Agriculture announced on June 6 that it will send six agricultural groups to the Soviet Union this summer and fall and that the U.S.S.R. will send a corresponding number to the United States. Three additional teams from each country are to be exchanged in 1959.

The U.S. delegations going to Russia in 1958 will be from the fields of agricultural economics, agricultural crops, soil and water use, veterinary science, mechanization of agriculture, cotton growing, and plant physiology.

The objective of the veterinary science group will be to obtain information on basic and applied research on diseases and parasites of animals. The members of this group include: Drs. W.A. Hagan, dean, New York State Veterinary College; Rue Jensen, dean, Colorado State University Veterinary College; A.H. Frank and F.D. Enzie, Animal Disease and Parasite Research Division, ARS; J.J. Callie, Plum Island Animal Disease Laboratory, ARS; and C.D. Van Houweling, assistant administrator, ARS.

This delegation is expected to leave for the Soviet Union about July 15. The veterinary science group from Russia is expected to visit this country in October and November.

The exchange plan is in accordance with an agreement between the U.S. and the Soviet Union providing for a general program of exchanges in cultural, technical, and educational fields which was announced last January. The State Department regards this policy as "a significant first step in the improvement of understanding between the two countries."

## National Swine Growers Council Has Four Veterinarians in Disease Control Group

Four veterinarians are on the disease control committee of the National Swine Growers Council. Dr. S. H. McNutt, Madison, Wis., will again be chairman. The other veterinarians on the nine-man council are: Drs. Maynard Spear, Ames, Iowa; F. J. Mulhern, Washington, D. C.; and Harry Geyer, Columbus, Ohio.—*National Hog Farmer (April, 1958) : 8*

## Pennsylvania Declared Eleventh State to Be Brucellosis-Free

Pennsylvania is the eleventh state in the modified-certified brucellosis-free group. The others are Connecticut, Delaware, Maine, Minnesota, New Hampshire, North Carolina, Rhode Island, Washington, and Wisconsin.—*U.S.D.A., (March 21, 1958).*

## Third Army Area Veterinary Training Conference Held May 15-16

The annual Third Army Veterinary Conference was held at Fort McPherson, May 15-16, 1958, with more than 60 Army and Air Force veterinary officers attending.

The visiting speakers included Brig. Gen. Elmer W. Young, chief, Army Veterinary Service, and Col. R. R. Miller, chief, Air Force Veterinary Services.

Largely concerned with technical veterinary problems, the subjects included veterinary public health problems presented by representatives of the U. S. Public Health Service; radiation effects in animals and radiation processing of foods discussed by officials of the Atomic Energy Commission's Agricultural Research program; and inspection policies of the military subsistence supply agency by the chief of the inspection division from Chicago.

*—U. S. Army Photo.*

**Lt. Col. L. C. Tekse, Third Army veterinarian (left), is pictured with Brig. Gen. Elmer W. Young, chief, Army Veterinary Service, at the Third Army Veterinary Training Conference.**

New equipment, including radiac instruments, counters, and scalers used in monitoring food and substances in connection with problems encountered in the atomic age, were displayed by Lt. Col. R. Anslow, chief of the section.

## AMONG THE STATES AND PROVINCES

### Arizona

**State Association.**—The midyear meeting of the Arizona V.M.A. was held at the El Conquistador Hotel in Tucson on May 25, 1958.

The business meeting was followed by dinner and a discussion in the evening.

s/D. E. MONTY, JR., *Resident Secretary.*

### Connecticut

**State Association.**—The spring meeting of the Connecticut V.M.A. was held in the Hotel Bond, Hartford, on May 7, 1958.

At the business meeting, the newly formed public relations committee was authorized to issue news releases and to present radio programs. Dr. Joseph DeVita, New Haven, is the chairman of the new committee.

The association voted to make recommendations to the Governor for the appointment of a member to the State Board of Veterinary Registration and Examination.

Dr. Douglas C. Maplesden, professor of large animal medicine, Ontario Veterinary College, Guelph, presented a discussion on calfhood diseases.

Dr. Thomas C. Jones, pathologist, The Angell Memorial Hospital, Boston, Mass., gave an illustrated lecture on the present status and future development of veterinary surgical pathology.

The annual outing meeting of the association will be held at the Rosewood Inn and Grove in Simsbury on Aug. 6, 1958.

s/E. H. PATCHEN, *Secretary.*

• • •

**Dr. Jungherr Receives Research Award.**—Dr. Erwin L. Jungherr (VI '22), professor of animal pathology and head of the Department of Animal Diseases, was the recipient of the Distinguished Service Research Award for 1958 of the Animal Health Institute. The award consists of a bronze plaque and $1000, and is given in recognition of outstanding research and achievement in the field of animal health.

### Illinois

**Joint Clinic.**—A one-day clinic sponsored jointly by the Northern Illinois V.M.A. and the Chicago V.M.A. met April 30, 1958, at the Fox Valley Livestock Center in Illinois.

The program was divided into four sections: small animals; horses; cattle; hogs and sheep. Dr. T. M. Folkerts, Lincoln, gave a poultry demonstration.

s/C. H. ARMSTRONG, *Secretary, Chicago V.M.A.*

**Chicago Association.**—The Chicago V.M.A. met in the Lincoln Room of the LaSalle Hotel, Chicago, on May 13, 1958.

Dr. J. E. Mosier, professor of medicine and surgery, College of Veterinary Medicine, Kansas State University, presented an illustrated lecture entitled "Odds and Ends of Canine Medicine."

The association's annual spring banquet was held at the Tam O'Shanter Country Club on June 10, 1958.

s/C. H. ARMSTRONG, *Secretary.*

### Indiana

**Dr. Petry Honored for Community Service.**—Dr. Chauncey O. Petry (CVC '15), Ossian, Ind., received an award for outstanding service to the community during the annual Wells County Fish Fry at the Bluffton Community Building on March 19, 1958.

Dr. Petry, who is confined to his home due to a broken hip, was honored for his years of service as a veterinarian and for his work with the American Legion, 4-H Clubs, and the county welfare agencies.

Dr. Kenneth Weinland, Ossian, accepted the award for Dr. Petry.

s/K. M. WEINLAND, *Correspondent.*

### Iowa

**Central Iowa Association.**—The Central Iowa V.M.A. met for dinner at the Breese House, Ankeny, on May 19, 1958.

Dr. L. W. Swain moderated a panel discussion on cattle practice in which Dr. Greg Raps spoke on sterility problems in cattle; Dr. Robert Finch discussed rabies in cattle, and Dr. Joseph Graham reported on special restraint devices.

s/S. L. HENDRICKS, *Secretary-Treasurer.*

### Massachusetts

**Three members of the Massachusetts V.M.A. Drs. Edgar F. Tucker (left to right), Concord, T. C. Jones, Boston, and Douglas M. Stern, Amherst, are shown discussing veterinary medicine on the Dateline Boston Program, WHDH-TV.**

### Michigan

**Southeastern Michigan Association.**—The Southeastern Michigan V.M.A. held a joint

meeting with the Saginaw Valley V.M.A. at the Croation Catholic Center, April 30, 1958.

On the premise that more and more clients wish to open charge accounts with veterinarians, the associations conducted a panel discussion on the methods of handling credit to help their members gain a better insight into the handling of client-credit relationships.

Dr. Steve Kelly moderated the panel in which the following doctors participated: Peter Babich, Thomas Millerick, John Donovan, and Gus Eastman.

## Missouri

**Southwest Association.**—The Southwest Missouri V.M.A. held an all-day meeting, May 9, 1958, at the Moran Hotel in Springfield. Registration at the meeting included members from southwestern Missouri, northwestern Arkansas, northeastern Oklahoma, and southeastern Kansas.

The program was devoted to demonstrations and lectures by local veterinarians on both large and small animal medicines. Part of the program included the following: Dr. J. K. Farrell, president, Missouri V.M.A.; Dr. A. H. Groth, dean, School of Veterinary Medicine, University of Missouri; Dr. L. A. Rosner, Missouri State veterinarian; and M. B. Parker, representing Abbott Laboratories, Chicago.

The featured speaker at the banquet was C. C. Williford, retired weatherman, philosopher, and news reporter.

## New Jersey

**State Dairymen Meet Brucellosis Deadline.**—Every commercial dairyman in New Jersey was ready to meet the April 1 deadline set by the State Department of Health regarding brucellosis.

Beginning on that date, all milk sold or used in New Jersey had to be produced from brucellosis-free animals. In time for the deadline, every commercial dairy herd in the state had been tested for the disease and was found to meet all the requirements of the health department's ruling.

New Jersey is also making rapid progress towards certification by the U. S. Department of Agriculture as a brucellosis-free area. Thirteen counties now have the rating and, since Hudson County has no cattle, there are only seven more counties to go.

All cattle in these seven counties have now been tested and the rate of infection is well within the limits required for certification by the U.S.D.A. Only a technicality is delaying statewide certification, expected to be achieved not later than January, 1959.—*Farm Service News (May, 1958), New Jersey Department of Agriculture.*

## New York

**New York City, Inc., Association.**—The members of the Veterinary Medical Association of New York City, Inc., attended a rabies conference at Lederle Laboratories, Pearl River, N. Y., on May 21, 1958.

In addition to films on rabies in men and dogs, the following program was presented: History of Rabies in New York City—Dr. J. Asedo; Steps in Handling a Rabies Epidemic—Dr. J. Scruggs; Salient Symptoms of Canine Rabies Diagnosis—Dr. R. L. Buckhart; Demonstration of a Rabid Dog—Mr. J. Black; and The Use of Chick Embryo Rabies Vaccine, H.E.P., in Humans—Dr. R. Ruegsegger.

s/R. L. BUCKHART, *Correspondent.*

## Ohio

**Dr. Leonard Goss Appointed Director of Cleveland Zoo.**—Dr. Leonard J. Goss (OSU '34), veterinarian of the Bronx Zoo in New York since 1939 and its assistant director since 1952, took up new duties as director of the Cleveland, Ohio, zoo on May 15, 1958.

**Dr. Leonard J. Goss**

Following graduation from the College of Veterinary Medicine, Ohio State University, in 1934, Dr. Goss did graduate work in pathology, bacteriology, and biochemistry at Cornell University where he received his Ph.D. degree in 1938, while serving as instructor in veterinary pathology. He then became pathologist for the Kentucky Agricultural Experiment Station, a position he occupied until he became associated with the Bronx Zoo.

While in New York, Dr. Goss served as president of the Veterinary Medical Associa-

tion of New York City and was a member of the State Board of Veterinary Medical Examiners. He is president of the American Association of Zoological Parks and Aquariums.

## Oregon

**Dr. Steere Awarded Fulbright Scholarship.**—Dr. James H. Steere, Grants Pass, Ore., has been awarded a Fulbright scholarship in the field of agriculture and veterinary science for a full academic year at the Danish Graduate School for Foreign Students and the Royal Veterinary and Agricultural College, Copenhagen.

Dr. Steere received his A.B. degree from Pomona College in 1949 and his D.V.M. degree from the University of California in 1953. In Denmark, he plans to study pathology of the

Dr. James H. Steere

bovine reproductive tract and to work in the large animal clinic to study new techniques.

During his overseas stay, Dr. Steere has leased his practice to Dr. Kenneth Moody (CAL '58) who will be affiliated with him upon his return. Dr. Steere, his wife, and four daughters plan to leave for Europe in July, 1958. The fall semester at the college of veterinary science begins September 2.

## Pennsylvania

**Dr. Swope Accepts Assignment in India.**—Dr. Robert E. Swope (UP '48) has accepted an assignment with International Cooperation Administration (ICA) and will be attached to the veterinary staff of Kansas State College in India for the next two years.

Dr. Swope took a leave of absence from Pennsylvania State University and left the United States for New Delhi with his family on June 10. He began his duties as veterinary pathologist at the College of Veterinary Science and Animal Husbandry at Mhow, Madhya Pradesh, India, around July 1.

• • •

**Bucks-Montgomery Association.**—A regular meeting of the Bucks-Montgomery V.M.A. was held May 14, 1958, at the Moose Lodge in Doylestown, Pa.

Dr. J. Warren Detweiler (UP '43) showed slides and discussed his experiences on Guam and in the South Pacific.

s/M. J. DEUBLER, *Secretary-Treasurer.*

• • •

**Conference on Communicable Diseases for Regulatory Veterinarians.**—This third annual conference held at the University of Pennsylvania, School of Veterinary Medicine, May 23, 1958, dealt with the regulatory veterinarian's responsibility relative to communicable diseases of animals.

Dr. Mark W. Allam, dean, School of Veterinary Medicine, University of Pennsylvania, discussed veterinary medical education.

Dr. Robert R. Marshak, School of Veterinary Medicine, University of Pennsylvania, presented a demonstration of tuberculin reactions and proper methods of injection.

The following veterinarians also appeared on the program: Drs. James E. Prier—Clostridial Diseases; Israel Live—Fundamental Aspects of Immunity; Howard A. Milo—Brucellosis Control, and Highlights in Brucellosis; James H. Steele—Regulatory Veterinarians in Public Health; and Klaus Hubben—Anthrax in Cattle.

s/E. D. TUCKERMAN, *Chairman.*

## Wisconsin

**University of Wisconsin Holds Short Course on Bovine Mastitis.**—The veterinary science department, University of Wisconsin, sponsored a three-day short course, June 24-26, 1958, on all phases of diagnosis and control of mastitis in cattle to assist the Wisconsin practitioners in developing local programs of control and prevention.

Among the subjects discussed were: proper housing to prevent udder injury; the place of the Hotis test in mastitis control; and the value of dehydrated and prepared mediums for the busy practitioner in testing for mastitis.

The procurement of quarter milk samples for bacteriological examination was demonstrated, as well as the coagulase test, the antibiotic sensitivity tube test and cup test, and blood-testing equipment.

s/C. W. BURCH, *Extension Veterinarian.*

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**Northeastern Wisconsin Association.**—The spring meeting of the Northeastern Wisconsin V.M.A. was held at the Conway Hotel in Appleton on April 16, 1958. Registration included approximately 46 veterinarians.

Dr. Robert Glover, small animal practitioner, Evanston, Ill., was the featured speaker. He

discussed small animal practice as a part of a mixed practice.

A lengthy discussion was held on feeder-pig problems and their relation to the veterinary profession. Drs. E. P. Pope, H. J. O'Connell, A. Erdmann, and W. J. O'Rourke, all of Madison, Wis., also addressed the meeting.

s/WILLIAM MADSON, *Secretary.*

• • •

**Women's Auxiliary.**—A meeting of the newly formed Women's Auxiliary to the Northeastern Wisconsin Veterinary Medical Association was held in conjunction with the meeting of the Northeastern Wisconsin V.M.A. on April 16, 1958.

Mrs. F. J. Swanson, Bonduel, was elected president of the auxiliary. The other officers include: Mrs. W. Madson, Appleton, secretary; Mrs. C. J. Heagle, Gresham, treasurer; and Mrs. Q. Metzig, Oshkosh, publicity chairman.

s/WILLIAM MADSON, *Secretary, Northeastern Wisconsin, V.M.A.*

## STATE BOARD EXAMINATIONS

***Interested persons can obtain information about applications, fees, deadlines for filing applications, and exact time and place of examinations of the respective boards by writing to the persons whose names and addresses are given below.***

**BRITISH COLUMBIA**—November, 1958 (usually end of the second week); Vancouver. G. L. Stovell, British Columbia Veterinary Association, 3187 West 43rd Ave., Vancouver 13, secretary.

**INDIANA**—July 8-9, 1958, House of Representatives, State House, Indianapolis, Ind. Joe W. Green, secretary, Room 413, 611 N. Park Ave., Indianapolis 4, Ind.

**KENTUCKY**—July 28, 1958. University of Kentucky, Lexington. J. K. Bushnell, secretary, 229 Houston, Paris, Ky.

**MAINE**—July 7-8, 1958, State House, Augusta, Maine. E. C. Moore, secretary, Turner Center, Maine.

**MONTANA**—June 30-July 2, 1958, Montana State College, Bozeman. J. W. Safford, secretary treasurer, Capitol Station, Helena, Mont.

**NEW HAMPSHIRE**—July 1, 1958, State House, Concord, N.H. J. P. Seraichick, secretary-treasurer.

**RHODE ISLAND**—July 8-9, 1958, 505 Veterans' Memorial Bldg., Providence, R.I. T. J. Grennan, Jr., secretary, Box 31, Allenton, R. I.

## DEATHS

Star Indicates member of AVMA

★**Col. William H. Dean** (UP '17), 67, V.C., U.S. Army (retired), died at Letterman Army Hospital, Presidio of San Francisco, Calif., on May 10, 1958, after a short illness. In recent years he had made his home in Santa Rosa.

Born at Norton, Va., July 30, 1891, Colonel Dean attended the local schools, enlisted in the Army in 1908, saw service in Cuba and was discharged as a corporal in 1911. He enrolled at the University of Pennsylvania's veterinary school in 1914 and, upon graduation, was made an instructor in pathology and bacteriology at the school. He soon left to accept a commission as second lieutenant in the Army and served first with the 12th U.S. Cavalry; subsequently he was station veterinarian at several posts. In 1926, he was assigned to the Cavalry School, Fort Riley, as an instructor and was on the school staff for four years. He attended the Army Veterinary School, graduating in 1932, and two years later was transferred for duty with American forces in Tientsen, China, returning to the United States in 1937.

At the outbreak of World War II, Colonel Dean helped train personnel for a veterinary general hospital and then was assigned to the task force which invaded North Africa. He was soon detailed to the general staff as chief of the supply section, for which service he was awarded the Legion of Merit, Casablanca, French Morocco. In 1943, he was transferred to headquarters of the North African theatre of operations and appointed as Assistant Chief of Staff, G-4. For his exceptionally meritorious service, he was awarded the Legion of Merit, with Star, Algiers.

Colonel Dean returned to the United States and was retired as a colonel of the Veterinary Corps, U.S. Army, in September, 1945, with a distinguished record and ten military decorations and honors.

Surviving are his widow, the former Rena E. Cales, whom he married in 1915; a daughter, three grandsons, his mother, and a brother.

★**Walter K. Lewis** (MCK '00), 82, Hartsville, S. Car., died April 4, 1958, following an illness of several weeks.

Dr. Lewis entered government service after graduation, moving to Columbia in 1914, where he was in charge of the Bureau of Animal Industry, U.S.D.A., and also state veterinarian for Clemson College for 32 years. Retiring in 1946, he resided for the past 12 years in Hartsville.

Surviving are his widow, Mrs. Mae Alford Lewis, one son, and a sister.

★**John F. McDonough** (UP '10), 75, Philadelphia, Pa., died in December, 1957, after a long illness.

Dr. McDonough was a member of the Keystone and Pennsylvania associations.

**Joseph C. Reid** (KCV '07), 80, El Paso, Texas, died April 9, 1958.

Dr. Reid had retired from the U. S. Civil Service Commission. He was a member of the Masonic and Elks lodges.

He is survived by a niece, Mrs. Martha Stahr of Kansas City.

★**James W. Tooley** (ONT '96), Green Bay, Wis., died in November, 1957.

Dr. Tooley was made a life member of the AVMA in 1953.

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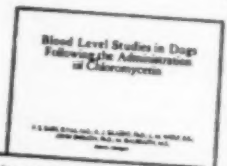

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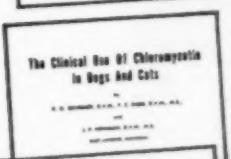

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by Margaret Schlichting, B.A.

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by R. W. Barnes, D.V.M.

Reprint, *The North American Veterinarian*

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by F. E. Eads, D.V.M., M.S. and K. D. Van Necker, D.V.M.

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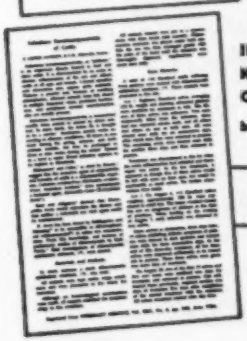

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# APPLICATIONS

## Applicants—Members of Constituent Associations

In accordance with paragraph (e) of Section 2, Article X, of the Administrative Bylaws, the names of applicants residing within the jurisdictional limits of a constituent association shall be published once in the JOURNAL.

The following applicants have been certified by the secretary of the applicable constituent association in accordance with paragraph (c) Section 2, Article X, of the Administrative Bylaws.

AKERS, WAYNE M.
624 N. Oak St., Kendallville, Ind.
V.M.D., University of Pennsylvania, 1957.

BAKER, JOHN D.
Klemme, Iowa.
D.V.M., Iowa State College, 1952.

COCKERILL, VERNON L.
107 S. Liberty, Rushville, Ill.
D.V.M., University of Illinois, 1957.

FLIPSE, FRANK A.
P. O. Box 494, Colby, Kan.
D.V.M., Kansas State College, 1941.

ILKIW, JOSEPH
1009 N. Oakley Blvd., Chicago, Ill.
D.V.M., Veterinary College in Lemberg, 1938.

WERRIN, MILTON
4429 Sherwood Rd., Philadelphia, Pa.
V.M.D., University of Pennsylvania, 1934.

## Applicants—Not Members of Constituent Associations

In accordance with paragraph (e) of Section 2, Article X, of the Administrative Bylaws, the names of applicants residing outside of the jurisdictional limits of the constituent associations, and members of the Armed Forces, shall be published in the JOURNAL for two successive months.

The first notice shall give the applicant's full name, school, and year of graduation, post office address, and the names of his endorsers.

### First Listing

BOND, GEORGE H.
421-C Washington Blvd., Presidio of San Francisco, Calif.
D.V.M., University of California, 1957.

RAULSTON, GILBERT L.
Chemical Warfare Laboratory Building 355, Army Chemical Center, Md.
D.V.M., Alabama Polytechnic Institute, 1944.

### Second Listing

GRAU, WILLIAM H., Jr., M.O.A., 207A, Gunter Air Force Base, Ala.

McCLAIN, JACK, 43rd Med. Det. (VFI), APO 58, New York, N. Y.

## Graduate Applicants

The following are graduates who have recently received their veterinary degree and who have applied for AVMA membership under the provision granted in the Administrative Bylaws to members in good standing of student chapters.

### First Listing

### A. & M. College of Texas

ANDERSON, DONALD J., D.V.M.
106-A Highland, Bryan, Texas.
Vouchers: F. C. Neal and D. R. Cassidy.

BURCH, LOGGINS, Jr., D.V.M.
Box 467, West Columbia, Texas.
Vouchers: A. A. Lenert and F. C. Neal.

CARDWELL, DAVID R., D.V.M.
701 S. Dexter, College Station, Texas.
Vouchers: S. M. Gaafar and R. D. Turk.

HILL, WILLIAM A., D.V.M.
Comanche, Texas.
Vouchers: H. E. Redmond and R. J. Beamer.

WILLIAMS, TOMMY D., D.V.M.
510 Sullivan St., Minden, La.
Vouchers: W. M. Romane and G. S. Trevino.

JAMES, BYRNE R. II, D.V.M.
302 E. Gem St., Raymondville, Texas.
Vouchers: W. M. Romane and A. A. Lenert.

LASSIG, JOHN K., D.V.M.
4905 Locust St., Bellaire, Texas.
Vouchers: H. A. Smith and F. T. Lynd.

LOFTIS, JOE D., D.V.M.
Rockwall, Texas.
Vouchers: W. L. Anderson and D. D. White.

MAGEE, DERRY D., D.V.M.
General Delivery, Amite, La.
Vouchers: W. M. Romane and P. F. Jungerman.

McCRADY, JAMES D., D.V.M.
201 Cooner St., College Station, Texas.
Vouchers: R. W. Moore and J. H. Milliff.

REYMAN, JESS T., D.V.M.
1011 Rusk St., Amarillo, Texas.
Vouchers: G. S. Trevino and W. C. Banks.

SCHENCK, CHARLES T., D.V.M.
623 E. 11½ St., Houston, Texas.
Vouchers: L. W. Gibbs and J. H. Milliff.

SEHLINKE, ORVILLE C., Jr., D.V.M.
Arden Rd., San Angelo, Texas.
Vouchers: G. S. Trevino and J. P. Davis.

SMITH, JOHN P., Jr., D.V.M.
Rt. 1, Box 6, Upper Marlboro, Md.
Vouchers: A. A. Lenert and W. C. Banks.

STANTON, JACK S., D.V.M.
Box 64, Iraan, Texas.
Vouchers: G. S. Trevino and R. J. Beamer.

TURBEVILLE, DONALD R.
4832 Dixie Garden Dr., Shreveport, La.
Vouchers: A. A. Lenert and P. L. Hubert.

WATTERS, JOHN W., D.V.M.
Pecos Animal Clinic, Pecos, Texas.
Vouchers: G. S. Trevino and R. J. Beamer.

WILSON, CHARLES F., D.V.M.
Gen. Del., Roans Prairie, Texas.
Vouchers: G. S. Trevino and R. J. Beamer.

### Colorado State University

COLE, WALTER W., D.V.M.
School of Veterinary Medicine, University of Pennsylvania, Philadelphia, Pa.
Vouchers: J. E. Oliver and J. R. Popish.

LUEBKE, ROBERT J., D.V.M.
2745 17th Ave., Forest Grove, Ore.
Vouchers: L. C. Moss and R. E. Pierson.

SIMMONS, ROBERT E., D.V.M.
P. O. Box 676, Morenci, Ariz.
Vouchers: J. R. Popish and J. E. Oliver, Jr.

### University of Georgia

BATCHELOR, ROBERT H., D.V.M.
10 Waugh Ave., Glyndon, Md.
Vouchers: E. W. Causey and J. D. Morton.

CRUMP, MALCOLM H., D.V.M.
College of Veterinary Medicine, Oklahoma State University, Stillwater, Okla.
Vouchers: J. D. Morton and P. Piercy.

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LaCenter, Ky.
Vouchers: E. W. Causey and C. Westerfield.

PARKER, DAVID H., D.V.M.
4821-33rd Rd. N., Arlington, Va.
Vouchers: H. E. Jordan and J. D. Edens.

WHITE, ROBERT R., D.V.M.
Sleepy Hollow Farm, Kingsville, Md.
Vouchers: T. F. Zweigert and M. Rohleder.

## University of Illinois

BUCHAL, GEORGE F., D.V.M.
59 Ingleside Shore Rd., Ingleside, Ill.
Vouchers: D. E. Dees and J. O. Alberts.

FETZNER, ROBERT E., D.V.M.
1611 E. Roosevelt Rd., Wheaton, Ill.
Vouchers: A. H. Safanie and R. P. Link.

LEVEQUE, JOSEPH I., D.V.M.
1720 S. Main St., Las Vegas, Nev.
Vouchers: L. E. Boley and A. G. Schiller.

LEVEQUE, NANCY W., D.V.M.
1720 S. Main St., Las Vegas, Nev.
Vouchers: A. G. Schiller and L. E. Boley.

McCULLOUGH, LYLE S., D.V.M.
2554 W. Fond du Lac Ave., Milwaukee, Wis.
Vouchers: R. P. Link and J. O. Alberts.

MICHAELS, JERROLD, D.V.M.
2207½ W. 183rd St., Homewood, Ill.
Vouchers: D. Maksic and A. G. Schillo.

## Iowa State College

DeZEEUW, WILLIAM E., D.V.M.
Orion, Ill.
Vouchers: B. W. Kingrey and R. L. Lundvall.

## Kansas State College*

BALDWIN, DONALD E., D.V.M.
817 S. 52nd St., Kansas City, Kan.
Vouchers: R. H. Featherston and G. W. Eberhart.

CHATFIELD, ELTON L., D.V.M.
Rt., 1, Goodland, Kan.
Vouchers: E. H. Coles and E. J. Frick.

KESTER, LARRY D., D.V.M.
Cambridge, Neb.
Vouchers: R. B. Barrett and E. J. Frick.

KUGLER, H. JOHN, D.V.M.
1718 Houston St., Manhattan, Kan.
Vouchers: G. W. Eberhart and E. J. Frick.

MADDEN, DAVID L., D.V.M.
7 W. Campus Cts., Manhattan, Kan.
Vouchers: E. J. Frick and W. H. Hay.

NICHOLS, WARREN D., D.V.M.
Alton, Kan.
Vouchers: J. E. Mosier and R. B. Barrett.

OSTERHELD, JOHN R., D.V.M.
Matawan, N. J.
Vouchers: E. J. Frick and E. H. Coles.

PIERSON, ROBERT H. II, D.V.M.
305 E. Main St., Crawfordsville, Ind.
Vouchers: R. B. Barrett and E. J. Frick.

ROBINSON, FARREL R., D.V.M.
54-C Hilltop Cts., Manhattan, Kan.
Vouchers: M. J. Twiehaus and E. H. Coles.

ROUSSEAU, GERALD D., D.V.M.
1432 Legore Lane, Manhattan, Kan.
Vouchers: E. J. Frick and W. H. Hay.

SAND, ROBERT F., D.V.M.
5555 S. Mission Rd., Tucson, Ariz.
Vouchers: E. J. Frick and W. H. Hay.

SCHAULIS, WILLIAM E., D.V.M.
Wakefield, Kan.
Vouchers: J. M. Eriksson and E. J. Frick.

SCHLEIFER, WILBUR A., D.V.M.
308 N. 21st St., Kansas City, Kan.
Vouchers: E. J. Frick and W. H. Hay.

SEVY, CALVIN E., D.V.M.
501 Pearl St., Bristol, Va.
Vouchers: E. J. Frick and W. H. Hay.

SHARP, DARRELL D., D.V.M.
Rt. 3, Council Grove, Kan.
Vouchers: J. E. Mosier and R. H. Featherston.

WATT, JOHN F., D.V.M.
1420 S. 37th St., Kansas City, Kan.
Vouchers: R. H. Featherston and E. J. Frick.

WEIDE, KENNETH D., D.V.M.
Platte City, Mo.
Vouchers: M. J. Twiehaus and D. S. Folse.

WESLEY, ALBERT E., D.V.M.
Kinsley, Kan.
Vouchers: E. H. Coles and E. J. Frick.

YORK, EDWARD, B., D.V.M.
Rt., 5, Manhattan, Kan.
Vouchers: E. J. Frick and W. H. Hay.

The following applicants were vouched for by Drs. F. H. Oberst and E. J. Frick.

ARNOLD, RICHARD A., D.V.M.
1511 Leavenworth St., Manhattan, Kan.

BALES, WILLIAM H., Jr., D.V.M.
1391 S. Lafayette St., Marshall, Mo.

BEEMAN, K. B., D.V.M.
Box 146, Frankfort, Kan.

BIRTELL, WILLIAM E., D.V.M.
Wakarusa, Kan.

CLARKE, GLEN A., D.V.M.
1917 College Heights, Manhattan, Kan.

COON, EVERETT M., D.V.M.
Prescott, Kan.

DUNTZ, DELVIN D., D.V.M.
709 Lindenwood St., Topeka, Kan.

JOHNSON, JOHN W., D.V.M.
Box 444, Vicksburg, Miss.

HODGSON, ROBERT M., D.V.M.
Rt. 1, Manhattan, Kan.

KETTER, WILLIAM E., D.V.M.
Rt. 1, Box 76, Osborne, Kan.

KRONE, JAMES V., D.V.M.
Crystal Lake, Ill.

OGBORN, WALTER W., D.V.M.
402 S. Chestnut St., Iola, Kan.

PARTON, LAWRENCE R., D.V.M.
3423 W. Luke St., Phoenix, Ariz.

SHERROD, JAMES H., D.V.M.
2620 Fourth St., N. W., Albuquerque, N. M.

SMITH, JAMES D., D.V.M.
M-30 Jardine Terrace, Manhattan, Kan.

SUTTON, Max L., D.V.M.
706 W. Court St., Beloit, Kan.

TALBOT, RICHARD B., D.V.M.
School of Veterinary Medicine, Iowa State College, Ames, Iowa.

WOODS, JOHN M., D.V.M.
Box 792, Manhattan, Kan.

The following applicants were vouched for by Drs. E. J. Frick and J. E. Mosier.

BOKELMAN, DELWIN L., D.V.M.
Greenleaf, Kan.

BRUNE, HAROLD E., D.V.M.
1216 N. 86th St., Bethel, Kan.

CLEVELAND, ROBERT, D.V.M.
65-B Hilltop Cts., Manhattan, Kan.

COLE, PATRICIA A., D.V.M.
8904 E. 50 Hwy., Kansas City, Mo.

FITZGERALD, DONALD W., D.V.M.
1825 Lomas Blvd., N. E., Albuquerque, N. M.

GANOUNG, RAYMOND L., D.V.M.
Rt. 2, Plainville, Kan.

GROSDIDIER, RALPH M., D.V.M.
Rt. 2, St. Paul, Kan.

HELD, NORMAN M., D.V.M.
611 N. Fritz St., Ellinwood, Kan.

JARCHOW, DONALD F., D.V.M.
Mount Carroll, Ill.

JOHANSEN, RICHARD D., D.V.M.
1208 Douglas St., Yankton, S. Dak.

LOOBY, GEORGE P., D.V.M.
22 Woodman St., Middletown, Conn.

JUDY, JOHN W. Jr., D.V.M.
307 Greenwood Ave., Greencastle, Ind.

LANDIS, THOMAS J., D.V.M.
61 North West St., Carlisle, Pa.

MURRAY, JAMES L., D.V.M.
505 Olive St., Menlo Park, Calif.

OLSON, GEORGE W., D.V.M.
Dwight, Kan.

POHLMAN, DONALD L. F., D.V.M.
S. Franklin St., Michigan City, Ind.

POST, OTIS G., D.V.M.
Rt. 2, Independence, Kan.

RANDALL, PHILIP R., D.V.M.
c/o Ripple and Liebl, Fort Dodge Rd., Dodge City, Kan.

RHOADES, KEITH R., D.V.M.
Quinter, Kan.

RODMAN, IVAN F., Jr., D.V.M.
88 S. 23rd St., Kansas City, Kan.

ROGGENDORFF, GEORGE A., D.V.M.
1211 Pierre St., Manhattan, Kan.

SHERMAN, KEITH C., D.V.M.
67-A Hilltop Cts., Manhattan, Kan.

SHIELDS, JAMES B., D.V.M.
1921 Stone St., Falls City, Neb.

SINCLAIR, HAL R., D.V.M.
Altus Veterinary Hospital, Altus, Okla.

SOJKA, NICKOLAS J., D.V.M.
Page, Neb.

STREVELL, EDWARD H., D.V.M.
1801 S. Olive St., Pittsburg, Kan.

TOBLER, EARL E., D.V.M.
Lyndon, Kan.

WREN, WALLACE B., D.V.M.
6 S. 74th St., Muncie, Kan.

## Michigan State University

BOYDSTON, JAMES N., D.V.M.
150 Glenwood Ave., Wauseon, Ohio.
Vouchers: R. D. Barnes and M. P. Rines.

GOODBARY, ROBERT F., D.V.M.
P.O. Box 28, Yuba City, Calif.
Vouchers: A. R. Drury and T. M. Forp.

GRACE, RICHARD S., D.V.M.
Bunker Hill Rd., Andover, Conn.
Vouchers: G. L. Waxler and W. F. Keller.

GREENE, RUSSELL A., D.V.M.
40 Wachusett Rd., Needham, Mass.
Vouchers: D. L. Piermattei and W. F. Keller.

HARRIS, JAMES M., D.V.M.
17590 Stoepel Ave., Detroit, Mich.
Vouchers: W. O. Brinker and R. G. Schirmer.

LEASH, AARON M., D.V.M.
20198 Livernois, Detroit, Mich.
Vouchers: R. D. Barner and R. G. Schirmer.

MOSTOSKY, ULREH V., D.V.M.
P. O. Box 339, East Lansing, Mich.
Vouchers: W. D. Brinker and N. R. Cholvin.

## University of Minnesota

BREYER, KEITH E., D.V.M.
Hortonville, Wis.
Vouchers: G. W. Mather and D. G. Low.

FERRIGAN, LAWRENCE W., D.V.M.
71 Jay St., Albany, N.Y.
Vouchers: J. T. Tumlin and R. K. Anderson.

HILDEBRANDT, OSCAR A., Jr., D.V.M.
Rt. 1, Box 189, Elkhart Lake, Wis.
Vouchers: G. W. Mather and D. G. Low.

WILSNACK, ROGER E., D.V.M.
1705 N. 12th St., Sheboygan, Wis.
Vouchers: J. Arnold and E. Usenik.

## Oklahoma A. & M. College

ERWIN, LAWRENCE H., D.V.M.
Alfalfa Veterinary Clinic, Cherokee, Okla.
Vouchers: J. W. Wolfe and L. Johnson.

HEAVNER, LOUIS W., JR., D.V.M.
Purcell, Okla.
Vouchers: N. B. Tennille and R. T. Panciera.

LESTER, GEORGE A., D.V.M.
906 Broadway, Little Rock, Ark.
Vouchers: J. B. Corcoran and P. Mayer.

PETERSON, JACK W., D.V.M.
Vernon Center, Minn.
Vouchers: L. H. Moe and P. Mayer.

RUST, JOHN M., D.V.M.
Rt. 1, Keithville, La.
Vouchers: E. D. Besch and J. B. Corcoran.

## Ontario Veterinary College

HEATH, GEORGE J., D.V.M.
350 Simcoe St., Petersboro, Ont.
Vouchers: T. L. Jones and J. A. Henderson.

McMORLAND, IAN P., D.V.M.
563 Linden Dr., Ladner, B. C.
Vouchers: T. L. Jones and J. A. Henderson.

REED, VICTOR I., D.V.M.
16 Forbes Ave., Guelph, Ont.
Vouchers: T. L. Jones and J. A. Henderson.

SINCLAIR, DUNCAN G., D.V.M.
Ontario Veterinary College, Guelph, Ont.
Vouchers: T. L. Jones and J. A. Henderson.

WALCROFT, MICHAEL J., D.V.M.
Kingston, N. S.
Vouchers: T. L. Jones and J. A. Henderson.

## University of Pennsylvania

BEHLER, WILEY V., V.M.D.
815 E. Montgomery Ave., Narberth, Pa.
Vouchers: J. E. Martin and R. R. Marshak.

DURFEE, GEORGE F., V.M.D.
Box 25, N. Hackensack, N. J.
Vouchers: R. R. Marshak and C. W. Raker.

FLICKINGER, GEORGE L., Jr., V.M.D.
4002 Pine St., Philadelphia, Pa.
Vouchers: J. E. Croshaw, Jr., and K. Hubben.

HOPWOOD, RONALD T., V.M.D.
1110 N. W. Little River Dr., Miami, Fla.
Vouchers: J. E. Martin and R. R. Marshak.

McKISSICK, GAYLORD E., V.M.D.
519 S. 45th St., Philadelphia, Pa.
Vouchers: J. E. Croshaw, Jr., and W. B. Boucher.

MAEL, MORTON S., V.M.D.
Village St., Millis, Mass.
Vouchers: R. R. Marshak and C. W. Raker.

TIBOLLA, BRUNO J., Jr., V.M.D.
Oak Ave., Rt. 2, Blackwood, N. J.
Vouchers: J. E. Martin and J. H. Mark.

TODD, GLEN C., V.M.D.
Rt. 4, Crawfordsville, Ind.
Vouchers: W. B. Boucher and J. T. McGrath.

TRAVIS, STANLEY O., V.M.D.
Rt. 1, Troy Rd., Keene, N. H.
Vouchers: K. Hubben and C. W. Raker.
WALTERS, SHIRLEY R., V.M.D.
4418 Pine St., Philadelphia, Pa.
Vouchers: W. B. Boucher and J. H. Mark.
WEBBER, Natalie K., V.M.D.
20 Adams Ave., Everett, Mass.
Vouchers: C. W. Raker and F. Kral.

### Ontario Veterinary College

All of the following applicants were vouched for by Drs. T. L. Jones and J. A. Henderson.

### Second Listing

ASSELSTINE, EDWARD N., D.V.M., 221-29 Ave., N. E., Calgary, Alta.
BAER, HAROLD, D.V.M., 7955 Mulberry St., Montreal, Que.
BARTOLF, FREDERICK, D.V.M., Estevan, Sask.
BEAUREGARD, SALLY T., D.V.M., 779 St. Clair Ave. W., Toronto, Ont.
BILISKI, PETER, D.V.M., Department of Agriculture, Toronto, Ont.
BILLIN, CAROLE A., D.V.M., 286 Pleasant St., Concord, N. H.
BILLIN, ROBERT B., D.V.M., 286 Pleasant St., Concord, N. H.
BODENDISTEL, JAMES E., D.V.M., Upper James St., Hamilton, Ont.
CALVERLEY, JOHN L., D.V.M., R. R. 1, Cache Bay, Ont.
DAVIES, RODERICK R., D.V.M., 183 Eglington Ave. W., Toronto, Ont.
DONALD, LEIGH B., D.V.M., Sackville, N. B.
EASTON, KENNETH L., D.V.M., 30757 Greenfield Rd., Royal Oak, Mich.
EROS, JULIA, D.V.M., 62 Heathdale Rd., Toronto, Ont.
FINLAY, RONALD C., D.V.M., Box 58, Erin, Ont.
FISHER, LLOYD D., D.V.M., 6 Sophia St., Barrie, Ont.
GRAY, DONALD P., D.V.M., Mountain, Ont.
GREENAWAY, LORNE E., D.V.M., 1168 Battle St., Kamloops, B. C.
HILLS, DONALD K., D.V.M., 356 Ominica St. E., Moose Jaw, Sask.
LANTINK, CHRISTIAN J., D.V.M., Kincardine, Ont.
McDONALD, JAMES A., D.V.M., 2901 Lafayette Rd., Indianapolis, Ind.
McKAY, KENNETH A., D.V.M., 5 Dormie Lane, Guelph, Ont.
McKEOWN, DONAL B., D.V.M., 4615 - 41st St., Washington, D. C.
MARLING, KEITH E., D.V.M., Creston, B. C.
MILLER, DOUGLAS S., D.V.M., 390 St. David St. S., Fergus, Ont.
O'CONNOR, A. TERENCE, D.V.M., 400 Pembina Highway, Winnipeg, Man.
PENNOCK, PAUL W., Jr., D.V.M., Ontario Veterinary College, Guelph, Ont.
RHOADS, CHARLES F., D.V.M., R. 3, Woodslee, Ont.
SCHAEFFER, WILLIAM D., D.V.M., Kirkton, Ont.
SCHOOLEY, MERYL P., D.V.M., Ilderton, Ont.
SMITH, HARRY J., D.V.M., Box 293, Ontario Veterinary College, Guelph, Ont.
Van der MEULEN, ALBERT C., D.V.M., 2000 Grove Ave., Highland Park, Detroit, Mich.
WIDDUP, CLIFFORD R., D.V.M., Ontario Veterinary College, Guelph, Ont.

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An association for the advancement of virus pneumonia-free pigs was formed in England on April 1, 1958.—*Vet. Rec. (April 12, 1958): 322.*

### Nominees in Executive Board Districts II and III

Following are the candidates nominated in Executive Board District elections, polls for which closed on May 31, 1958.

District II (Delaware, District of Columbia, Maryland, New Jersey, and Pennsylvania):

Dr. J. R. Porteus, Trenton, N. J.
Dr. S. F. Scheidy, Bryn Mawr, Pa.
Dr. Oscar Sussman, Princeton, N. J.
Dr. E. L. Symington, Newark, Del.
Dr. C. D. Van Houweling, Washington, D. C.

District III (Illinois, Indiana, and Wisconsin):

Dr. F. R. Booth, Elkhart, Ind.
Dr. A. G. Misener, Chicago, Ill.
Dr. W. G. Raudabaugh, Piper City, Ill.
Dr. W. H. Riser, Skokie, Ill.
Dr. C. M. Rodgers, Bladinsville, Ill.
Dr. H. P. Wessels, Geneva, Ill.
Dr. E. A. Woelffer, Oconomowoc, Wis.

A tie for fifth place resulted in seven nominees being qualified instead of the usual five.

Drs. Jo Anne Schmidt and E. R. Maschgan, of Chicago, counted the nominating ballots in these two elections on June 2, 1958, and certified the foregoing results.

Election ballots were mailed on June 13 to all AVMA members in Districts II and III. The polls for the election will close on July 12. The two members elected will take office at the conclusion of the annual meeting in Philadelphia for five-year terms.

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|---|---|---|---|
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| 1 | 16 | 2.25 | 88 |
| 1 | 24 | 3.21 | 80 |
| 1 | 124 | 2.00 | 80 |
| 4 | 183 | 2.7 | 82% |

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## COMING MEETINGS

Nebraska State Veterinary Medical Association. Summer meeting. Kearney, Neb., July 18-20, 1958. W. T. Spencer, 1250 N. 37th, Lincoln, secretary.

Alabama Polytechnic Institute. Annual conference for veterinarians. School of Veterinary Medicine, Auburn, July 20-23, 1958. T. C. Fitzgerald, program chairman.

Kentucky Veterinary Medical Association. Forty-seventh annual convention. Seelbach Hotel, Louisville, July 21-22, 1958. R. H. Singer, 136 Shawnee Place, Lexington, secretary-treasurer.

Canadian Veterinary Medical Association. Tenth annual Convention. Royal Alexandra Hotel, Winnipeg, Manitoba. July 21-23, 1958. Claude Kesley, 1195 Wellington St., Ottawa 3, Ont., executive secretary.

Connecticut Veterinary Medical Association. Annual outing meeting. Rosewood Inn and Grove, Simsbury, Conn., Aug. 6, 1958. E. H. Patchen, 289 New Haven Ave., Milford, Conn., secretary.

College of Veterinary Surgeons of Province of Quebec. Annual meeting. Quebec, Aug. 8-9, 1958. Jacques Saint Georges, St. Hyacinth, Que., public relations committee.

Mississippi State Veterinary Medical Association. Fifty-second annual meeting. Buena Vista Hotel, Biloxi, Aug. 10-12, 1958. H. F. McCrory, State College, Miss., secretary.

American Association of Veterinary Bacteriologists. Annual meeting. School of Veterinary Medicine, University of Pennsylvania, Philadelphia, Aug. 16, 1958. C. H. Cunningham, Michigan State University, College of Veterinary Medicine, East Lansing, secretary.

American Veterinary Medical Association. Ninety-Fifth Annual Meeting. Convention Hall, Philadelphia, Pa., Aug. 18-21, 1958. J. G. Hardenbergh, 600 S. Michigan Ave., Chicago 5, Ill., executive secretary.

Louisiana Veterinary Medical Association, Inc. Annual meeting, Montelone Hotel, New Orleans, Aug. 24-26, 1958. R. R. Gibbs, 6421 Chef Menteur Highway, New Orleans, La., program chairman.

New York State Veterinary Medical Society. Sixty-seventh annual meeting. Concord Hotel, Kiamesha Lake, N. Y., Sept. 4-6, 1958. Miss Joan S. Halat, 803 Varick St., Utica, N. Y., executive secretary.

Washington State Veterinary Medical Association. Annual meeting. Hotel Olympian, Olympia, Sept. 8-10, 1958. F. M. Shigley, P.O. Box 1163, Olympia, Wash., program chairman.

South Dakota Veterinary Association. Meeting. Hotel Cataract, Sioux Falls, Sept. 16-17, 1958. G. E. Duncan, Tyndall, secretary.

New England Veterinary Medical Association. Annual meeting. Hotel Wentworth-By-The-Sea, Portsmouth, N. H., Sept. 28-Oct. 1, 1958. C. Lawrence Blakely, 180 Longwood Ave., Boston 15, Mass., secretary-treasurer.

Missouri, University of. Annual short course for graduate veterinarians. School of Veterinary Medicine, Columbia, Mo., Oct. 6-7, 1958. Cecil Elder, chairman.

District of Columbia Veterinary Medical Association. Annual all-day meeting. Walter Reed Army Medical Center, Washington, D.C., Oct. 14, 1958. W. I. Gay, 5200 Chandler St., Bethesda, Md., secretary-treasurer.


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Eastern Iowa Veterinary Association, Inc. Annual meeting. Hotel Roosevelt, Cedar Rapids, Oct. 16-17, 1958. F. E. Brutsman, Traer, Iowa, secretary-treasurer.

Texas Veterinary Medical Association. Annual meeting. Stephen F. Austin Hotel, Austin, Oct. 19-21, 1958. Paul B. Blunt, 710 Maverick Bldg., San Antonio, secretary.

Florida State Veterinary Medical Association. Annual meeting. Galt Ocean Mile Hotel, Fort Lauderdale, Oct. 26-28, 1958. A. R. Chambers, 6116 Main St., Jacksonville, secretary.

Southern Veterinary Medical Association. Annual meeting. Claridge Hotel, Memphis, Tenn., Oct. 26-30, 1958. A. A. Husman, P.O. Box 91, Raleigh, N. Car., secretary.

Arizona Veterinary Medical Association. Annual meeting. Yuma, Ariz., Dec. 7-9, 1958. R. E. McComb, Jr., 4730 N. 7th Ave., Phoenix, program chairman.

Tennessee Veterinary Medical Association. Annual meeting. Noel Hotel, Nashville, Jan. 11-13, 1959. H. W. Hayes, 5009 Clinton Pike, Knoxville, secretary-treasurer.

Oklahoma Veterinary Medical Association. Annual meeting. Mayo Hotel, Tulsa, Jan. 25-27, 1959. M. N. Riemenschneider, 122 State Capitol Bldg., Oklahoma City, secretary.

## Foreign Meetings

Sixth International Congresses on Tropical Medicine and Malaria. Lisbon, Portugal, Sept. 5-13, 1958. Professor Manuel R. Pinto, Institute of Tropical Medicine, Lisbon, secretary-general. (Membership application forms may be obtained by U.S. veterinarians by writing to the AVMA.)

German Veterinary Association. Regular biennial meeting. Hannover, Germany, Sept. 19-21, 1958. Dr. Karl Ohly, 123 Forsthausstrasse, Frankfurt/Main, Germany, president.

Seventh International Congress on Hydatid Disease. Beirut, Lebanon, Sept. 20-22, 1958. Dr. Elias Sader, c/o Lebanese Order of Physicians, P.O.B. 640, Beirut, Lebanon, secretary-general. (Applications to present papers must be accompanied by an abstract).

International Veterinary Congress. Sixteenth session. Madrid, Spain, May 21-27, 1959. Prof. Pedro Carda A., general secretary, Calle Villanueva 11, Madrid.

U.S. COMMITTEE: Dr. W. A. Hagan, chairman, New York State Veterinary College, Ithaca, N. Y.; Dr. J. G. Hardenbergh, secretary, 600 S. Michigan Ave., Chicago 5, Ill.

Third World Congress on Fertility and Sterility. Amsterdam, Holland, June 7-13, 1959. Dr. L. I. Swaab, Sint Agnietenstraat 4, Amsterdam, Holland, honorary secretary.

## Regularly Scheduled Meetings

ALABAMA—Central Alabama Veterinary Association, the first Thursday of each month. Dr. G. W. Jones, Main St., Prattville, Ala., secretary-treasurer.

Jefferson County Veterinary Medical Association, the second Thursday of each month. S. A. Price, 213 N. 15th St., Birmingham, secretary.

Mobile-Baldwin Veterinary Medical Association, the third Tuesday of each month. W. David Gross, 773 Holcombe Ave., Mobile, Ala., secretary.

North Alabama Veterinary Medical Association, the second Thursday of November, January, March, May, July, and September, in Decatur, Ala. Ray A. Ashwander, Decatur, Ala., secretary.

North East Alabama Veterinary Medical Association, the second Tuesday of every other month. Leonard J. Hill, P.O. Box 761, Gadsden, Ala., secretary-treasurer.

ARIZONA—Central Arizona Veterinary Medical Association, the second Tuesday of each month. Keith T. Maddy, Phoenix, Ariz., secretary.

Southern Arizona Veterinary Medical Association, the third Wednesday of each month at 7:30 p.m. E. T. Anderson, Rt. 2 Box 697, Tucson, Ariz., secretary.

CALIFORNIA—Alameda-Contra Costa Veterinary Medical Association, the fourth Wednesday of Jan., March, May, June, Aug., Oct., and Nov. Leo Goldston, 3793 Broadway, Oakland 11, Calif., secretary.

Bay Counties Veterinary Medical Association, the second Tuesday of February, April, July, September, and December. Herb Warren, 3004 16 St., San Francisco, Calif., executive secretary.

Central California Veterinary Medical Association, the fourth Tuesday of each month. R. B. Barsaleau, 2333 E. Mineral King, Visalia, Calif., secretary.

Kern County Veterinary Medical Association, the first Thursday evening of each month. James L. Frederickson, 17 Niles St., Bakersfield, Calif., secretary-treasurer.

Mid-Coast Veterinary Medical Association, the first Thursday of every even month. W. H. Rockey, P. O. Box 121, San Luis Obispo, Calif., secretary.

Monterey Bay Area Veterinary Medical Association, the third Wednesday of each month. Lewis J. Campbell, 90 Corral de Tierra, Salinas, Calif., secretary.

North San Joaquin Valley Veterinary Medical Association, the fourth Wednesday of each month at the Hotel Covell, in Modesto, Calif. Lyle A. Baker, Turlock, Calif., secretary.

Orange Belt Veterinary Medical Association, the second Monday of each month. Chester A. Maeda, 766 E. Highland Ave., San Bernardino, Calif., secretary.

Orange County Veterinary Medical Association, the third


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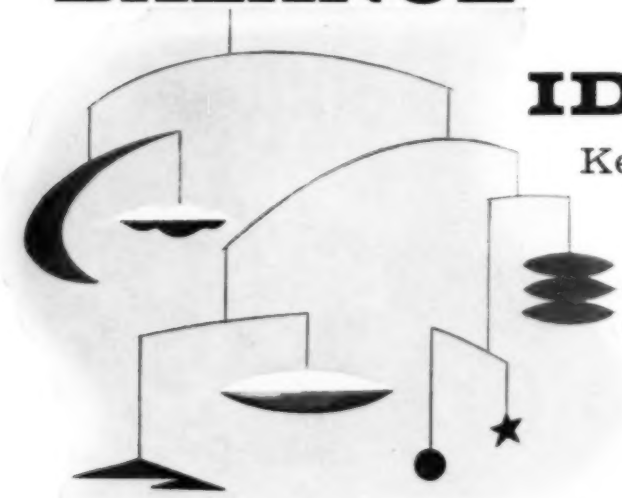

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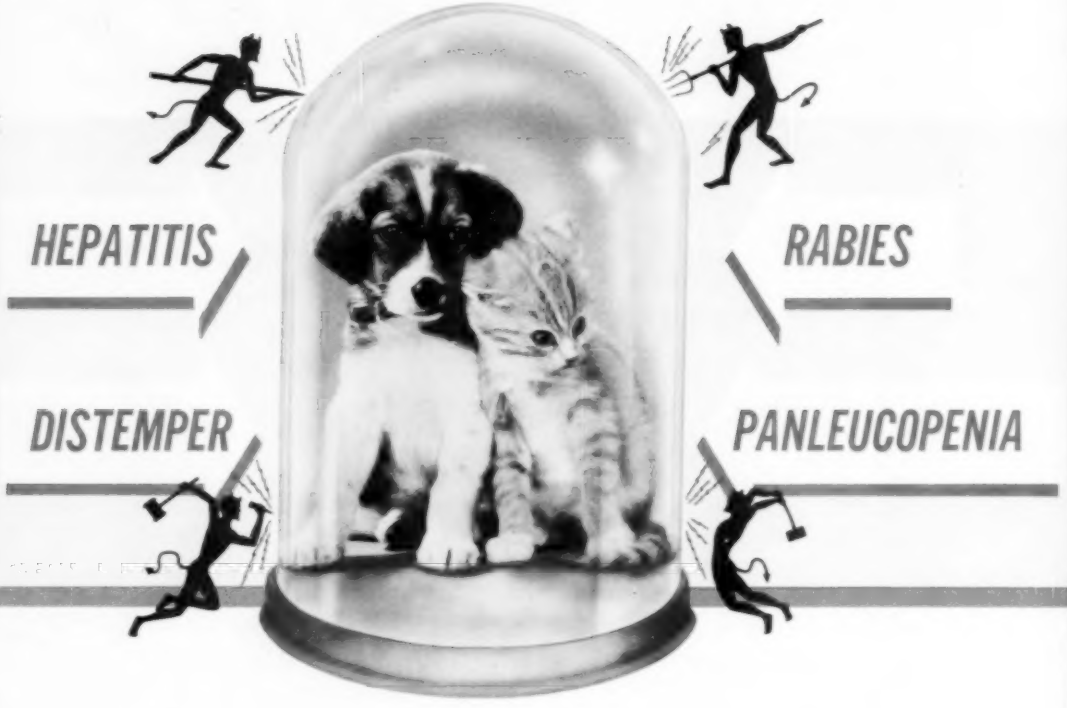


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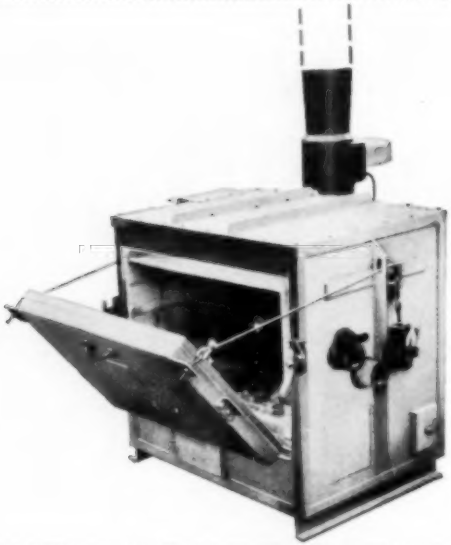

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Peninsula Veterinary Medical Association, the third Monday of each month. R. M. Granfield, 2600 W. El Camino Real, San Mateo, Calif., secretary-treasurer.

Redwood Empire Veterinary Medical Association, the third Thursday of each month. Robert L. Chandler, P.O. Box 8, Ukiah, Calif., secretary.

Sacramento Valley Veterinary Medical Association, the second Wednesday of each month. W. E. Steinmetz, 4227 Freeport Blvd., Sacramento, Calif., secretary.

San Diego County Veterinary Medical Association, the fourth Tuesday of each month. H. R. Rossoll, 1795 Moore St., San Diego, Calif., secretary.

San Fernando Valley Chapter SCVMA, the second Tuesday of each month at 7:30 p.m., Hody's Restaurant, North Hollywood, Calif. Dr. V. H. Austin, 14931 Oxnard St., Van Nuys, secretary-treasurer.

San Fernando Valley Veterinary Medical Association, the second Friday of each month at the Casa Escobar Restaurant in Studio City. Dr. Rolf Reese, 23815 Ventura Blvd., Calabasas, Calif., secretary.

Santa Clara Valley Veterinary Association, the fourth Tuesday of each month. Kay Beulley, N. Fourth and Gish Rd., San Jose, Calif., secretary.

Southern California Veterinary Medical Association, the last Wednesday of each month. Don Mahan, 1919 Wilshire Blvd., Los Angeles 57, Calif., executive secretary.

Tulare County Veterinary Medical Association, the sec-

## Second Annual Congress (Region III) to be Held in Peoria

The second annual congress (region 3), sponsored by Pfizer Laboratories, was held at 9 a.m., May 8, 1958, at the Hotel Pere Marquette in Peoria, Ill. Dr. Robert Graham, dean emeritus of the College of Veterinary Medicine, University of Illinois, was chairman of the all-day session.

To open the program, Dr. Hans Selye, of the University of Montreal, presented the film, "Stress and the Adaptation Syndrome," which was followed by a discussion of "New Developments in Veterinary Ophthalmology" by Dr. Richard H. Donovan, Jaffrey, N. H. "Recent Etiological Considerations in Milk Fever" was presented by Dr. Robert R. Marshak of the University of Pennsylvania.

Dr. Frank J. Milne, of Ontario Veterinary College, discussed the latest techniques in large animal surgery. Dr. James H. Gillespie, Cornell University, spoke on standardization of a dual live virus vaccine for dogs and its use in prevention of distemper and infectious canine hepatitis.

"Infectious Atrophic Rhinitis" was the subject of a talk by Dr. William P. Switzer of Iowa State College. The afternoon session began with "Antibiotics in Livestock Nutrition" by Dr. C. Kenneth Whitehair of Michigan State University. The remainder of the afternoon was devoted to practical discussion groups and the presentation of the film "The Bronchopulmonary Segments, Anatomy, and Bronchoscopy," winner of many film awards including the 1956 Silver Cup, Salerno Film Festival.


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ond Thursday of each month. D. E. Britten, 544 N. Ben Maddox, Visalia, Calif., secretary.

COLORADO—Denver Area Veterinary Society, the fourth Tuesday of every month. Richard C. Tolley, 5060 S. Broadway St., Englewood, Colo., secretary.

Northern Colorado Veterinary Medical Society, the first Monday of each month. M. A. Hammarlund, School of Veterinary Medicine, Colorado A. & M. College, Fort Collins, Colo., secretary.

DELAWARE—New Castle County Veterinary Association, the first Tuesday of each month at 9:00 p.m. in the Hotel Rodney, Wilmington, Del. E. J. Hathaway, Clifton Park Manor, Apt. 73-5, Wilmington 2, Del., secretary.

FLORIDA—Central Florida Veterinary Medical Association, the first Tuesday of each month, time and place specified monthly. Jack H. McElyer, 5925 Edgewater Drive, Orlando, Fla., secretary.

Florida West Coast Veterinary Medical Association, the second Wednesday of each month at the Lighthouse Inn, St. Petersburg. William F. Casler, 2540 30th Ave., N., St. Petersburg, secretary-treasurer.

Jacksonville Veterinary Medical Association, the first Thursday of every month. Dodsons Restaurant. P. S. Roy, 4443 Atlantic Blvd., Jacksonville, Fla., secretary.

Northwest Florida Veterinary Medical Society, third Wednesday of each month, time and place specified monthly. T. R. Geci, 108B Catherine Ave., Pensacola, Fla., secretary.

Palm Beach Veterinary Society, the last Thursday of each month in the county office building at 810 Datura St., West Palm Beach. J. J. McCarthy, 500-25th Street, West Palm Beach, Fla., secretary.

Ridge Veterinary Medical Association, the fourth Thursday of each month in Bartow, Fla. Paul J. Myers, Winter Haven, Fla., secretary.

South Florida Veterinary Society, the third Wednesday of each month. Time and place specified monthly. Frank Mueller, Jr., 4148 E. 8th Ave., Hialeah, Fla., secretary.

Suwannee Valley Veterinary Association, the fourth Tuesday of each month, Hotel Thomas, Gainesville. W. B. Martin, Jr., 3002 N. W. 6th St., Gainesville, Fla., secretary.

Volusia County Veterinary Medical Association, the fourth Thursday of each month. A. E. Hixon, 131 Mary St., Daytona Beach, Fla., secretary.

GEORGIA—Atlanta Veterinary Society, the third Thursday of each month at the Elk's Home, 726 Peachtree St., Atlanta Donald C. Ford, Forest Park, secretary.

ILLINOIS—Chicago Veterinary Medical Association, the second Tuesday of each month. Charles H. Armstrong, 1021 Davis St., Evanston, secretary.

Eastern Illinois Veterinary Medical Association, the first Thursday of March, June, September, and December. A one-day clinic is held in May. Alfred G. Schiller, Veterinary Clinic, University of Illinois, Urbana, secretary-treasurer.

INDIANA—Central Indiana Veterinary Medical Association, the second Wednesday of each month. Peter Johnson, Jr., 4410 N. Keystone Ave., Indianapolis 5, secretary.

Michiana Veterinary Medical Association, the second Thursday of every month except July and December, at the Hotel LaSalle, South Bend, Ind. J. M. Carter, 3421 S. Main St., Elkhart, Ind., secretary.

Tenth District Veterinary Medical Association, the third Thursday of each month. J. S. Baker, P. O. Box 52, Pendleton, Ind., secretary.

IOWA—Cedar Valley Veterinary Medical Association, the second Monday of each month, except January, July, August, and October in Black's Tea Room, Waterloo, Iowa. A. J. Cotten, Grundy Center, secretary.

Central Iowa Veterinary Medical Association, the third Monday of each month, except June, July, and August, at 6:30 p.m., Breeze House, Ankeny, Iowa. John Herrick, Ames, secretary.

Coon Valley Veterinary Medical Association, the second Wednesday of each month, September through May, at 7:30 p.m., Cobblestone Inn, Storm Lake, Iowa. Robert McCutcheon, Holstein, secretary.

East Central Iowa Association, the second Thursday of each month at 6:30 p.m., usually in Cedar Rapids, Iowa. Dr. J. G. Irwin, Iowa City, secretary.

Fayette County Veterinary Medical Association, the third Thursday of each month at 6:30 p.m. in West Union, Iowa. H. J. Morgan, West Union, secretary.

Lakes Veterinary Association, the first Tuesday of each month, September through May, at 6:30 p.m., at the Gardson Hotel, Estherville, Iowa. Barry Barnes, Milford, secretary.

North Central Iowa Veterinary Medical Association, the third Thursday of April, at the Warden Hotel, Fort Dodge, Iowa. H. Engelbrecht, P. O. Box 797, Fort Dodge, secretary.

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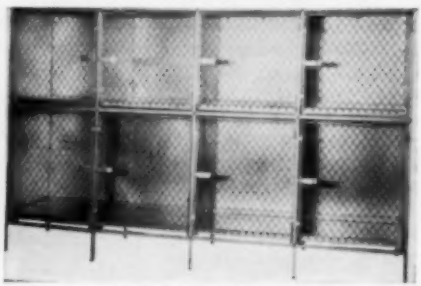

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## Dr. Dorman Hughes Joins Staff of Eaton Laboratories

Dr. Dorman L. Hughes (MSC '52) has joined the staff of the Division of Veterinary Medicine, Eaton Laboratories, Norwich, N.Y. Dr. D. B. Roberts (UP '48), division director, has announced that Dr. Hughes will be in charge of the small

Dr. Dorman L. Hughes

and furbearing animal research section. A native of Indiana, Dr. Hughes was educated in the Wingate schools and at Wabash College. He spent three years in the Navy, serving in the Mediterranean area, on the West Coast, and in Alaska.

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tion, the first Tuesday of February, May, August, and November at the Winneslick Hotel, Decorah, Iowa, 6:30 p.m. Donald E. Moore, Box 178, Decorah, Iowa, secretary.

Northwest Iowa Veterinary Medical Association, the second Tuesday of February, May, September, and December, at the Community Bldg., Sheldon. W. Ver Meer, Hull, secretary.

Southeastern Iowa Veterinary Association, the first Tuesday of each month at Mt. Pleasant, Iowa. Warren Kilpatrick, Mediapolis, secretary.

Southwestern Iowa Veterinary Medical Association, the first Tuesday of April and October, Hotel Chieftain, Council Bluffs, Iowa. J. P. Stream, Creston, secretary.

Upper Iowa Veterinary Medical Association, the third Tuesday of each month at 7:00 p.m., at All Vets Center, Clear Lake, Iowa. Richard Baum, Osage, secretary.

KENTUCKY—Central Kentucky Veterinary Medical Association, the first Wednesday of each month. L. S. Shirrell, Varsailles Rd., Frankford, secretary.

Jefferson County Veterinary Society of Kentucky, Inc., the first Wednesday evening of each month in Louisville or within a radius of 50 miles. W. E. Bewley, P.O. Box "H," Crestwood, secretary.

MARYLAND—Baltimore City Veterinary Medical Association, the second Thursday of each month, September through May (except December), at 9:00 p.m., at the Park Plaza Hotel, Charles and Madison St., Baltimore, Md. Norman Herbert, 3506 Joann Drive, Baltimore 7, Md., secretary.

MICHIGAN—Mid-State Veterinary Medical Association, the fourth Thursday of each month with the exception of November and December. Robert E. Kader, 5034 Armstrong Rd., Lansing 17, Mich., secretary.

Saginaw Valley Veterinary Medical Association, the last Wednesday of each month. S. Correll, Rt. 1, Midland, Mich., secretary.

Southeastern Veterinary Medical Association, the fourth Wednesday of every month, September through May. Gilbert Meyer, 14003 E. Seven Mile Rd., Detroit 5, Mich., secretary.

MISSOURI—Greater St. Louis Veterinary Medical Association, the first Friday of each month (except July and August), at the Coronado Hotel, Lindell Blvd. and Spring Ave., St. Louis, Mo., at 8 p.m. Chester R. Plegge, 4249 Peck St., St. Louis 7, Mo., secretary.

Kansas City Veterinary Medical Association and Kansas City Small Animal Hospital Association, the third Thursday of each month at the Hotel President, Kansas City, Mo. Frank A. O'Donnell, Parksville, Mo., secretary-treasurer.

NEVADA—Western Nevada Veterinary Society, the first Tuesday of each month. Paul S. Silva, 1170 Airport Road, Reno, Nev., secretary.

NEW JERSEY—Central New Jersey Veterinary Medical Association, the second Thursday of November, January, March, and May at Old Hights Inn, Hightstown, N. J. David C. Tudor, Cranbury, N. J., secretary.

Metropolitan New Jersey Veterinary Medical Association, the third Wednesday evening of each month from October through April at the Academy of Medicine, 91 Lincoln Park South, Newark, N. J. Myron S. Arlein, 2172 Milburn Ave., Maplewood, N. J., secretary.

Northern New Jersey Veterinary Association, the fourth Tuesday of each month at the Elks Club, Hackensack. Burritt Lupton, 569 Franklin Ave., Wyckoff, secretary.

Northwest Jersey Veterinary Society, the third Wednesday of every odd month. G. R. Muller, 43 Church St., Lambertville, N. J., secretary.

Southern New Jersey Veterinary Medical Association, the fourth Tuesday of each month at the Collingswood

Veterinary Hospital, Collingswood. R. M. Sauer, secretary.

NEW MEXICO—Bernalillo County Veterinary Practitioners Association, third Wednesday of each month, Fez Club, Albuquerque, N.M. Jack Ambrose, 3018 N. Rio Grande Blvd., Albuquerque, secretary-treasurer.

NEW YORK—New York City, Inc., Veterinary Medical Association of, the first Wednesday of each month at the New York Academy of Sciences, 2 East 63rd St., New York City. C. E. DeCamp, 43 West 61st St., New York 23, N. Y., secretary.

New York State Veterinary College, Annual conference for veterinarians. Cornell University, Ithaca. W. A. Hagan, New York State Veterinary College, Cornell University, Ithaca, N. Y., dean.

Monroe County Veterinary Medical Association, the first Thursday of even-numbered months except August. Irwin Bircher, 50 University Ave., Rochester, N. Y., secretary.

NORTH CAROLINA—Central Carolina Veterinary Medical Association, the second Wednesday of each month at 7:00 p.m. in the O'Henry Hotel, Greensboro. Joseph A. Lombardo, 411 Woodlawn Ave., Greensboro, secretary.

Eastern North Carolina Veterinary Medical Association, the first Friday of each month, time and place specified monthly, Byron H. Brow, Box 453, Goldsboro, N. Car., secretary.

Piedmont Veterinary Medical Association, the last Friday of each month. T. L. James, Box 243, Newton, N. Car., secretary.

Twin Carolinas Veterinary Medical Association, the third Friday of each month at Orange Bowl Restaurant, Rockingham, N. Car., at 7:30 p.m. J. E. Currie, 690 N. Leak St., Southern Pines, N. Car., secretary.

Western North Carolina Veterinary Medical Association, the second Thursday of every month at 7:00 p.m. in the George Vanderbilt Hotel, Ashville, N. Car. Vilu Lind, 346 State St., Marion, N. Car., secretary.

OHIO—Cincinnati Veterinary Medical Association, the third Tuesday of every month at Shuller's Wigwam, 6210 Hamilton Ave., at North Bend Road. G. C. Lewis, Cincinnati, Ohio, secretary-treasurer.

Columbus Academy of Veterinary Medicine, every month, September through May. E. M. Simonson, Columbus, Ohio, secretary-treasurer.

Cuyahoga County Veterinary Medical Association, the first Wednesday in September, October, December, February, March, April, and May, at 9:00 p.m. at the Carter Hotel, Cleveland, Ohio. F. A. Coy, Cleveland, Ohio, secretary.

Dayton Veterinary Medical Association, the third Tuesday of every month. O. W. Fallang, Dayton, secretary.

Killbuck Valley Veterinary Medical Association, the first Wednesday of alternate months beginning with February. D. J. Kern, Killbuck, Ohio, secretary-treasurer.

Mahoning County Veterinary Medical Association, the third Tuesday of each month, at 9:00 p. m., Youngstown Maennerchor Club, Youngstown, Ohio. Sam Segall, 2935 Glenwood Ave., Youngstown, secretary.

Miami Valley Veterinary Medical Association, the first Wednesday of December, March, June, and September. J. M. Westfall, Greenville, Ohio, secretary-treasurer.

(*Continued on adv. p. 46*)


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REFERENCES: 1. Mosier, J. E.: Vet. M. 50:605 (Nov.) 1955. 2. Bolloff, G. B.: Calif. Vet. 9:27 (Sept.-Oct.) 1956. 3. Pollock, S.: J. Am. Vet. M. Ass. 129:274 (Sept.) 1956.

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# What Is Your Diagnosis?

Because of the interest in veterinary radiology, a case history and radiographs depicting a diagnostic problem are usually published in each issue.

***Make your diagnosis from the picture below—then turn the page***

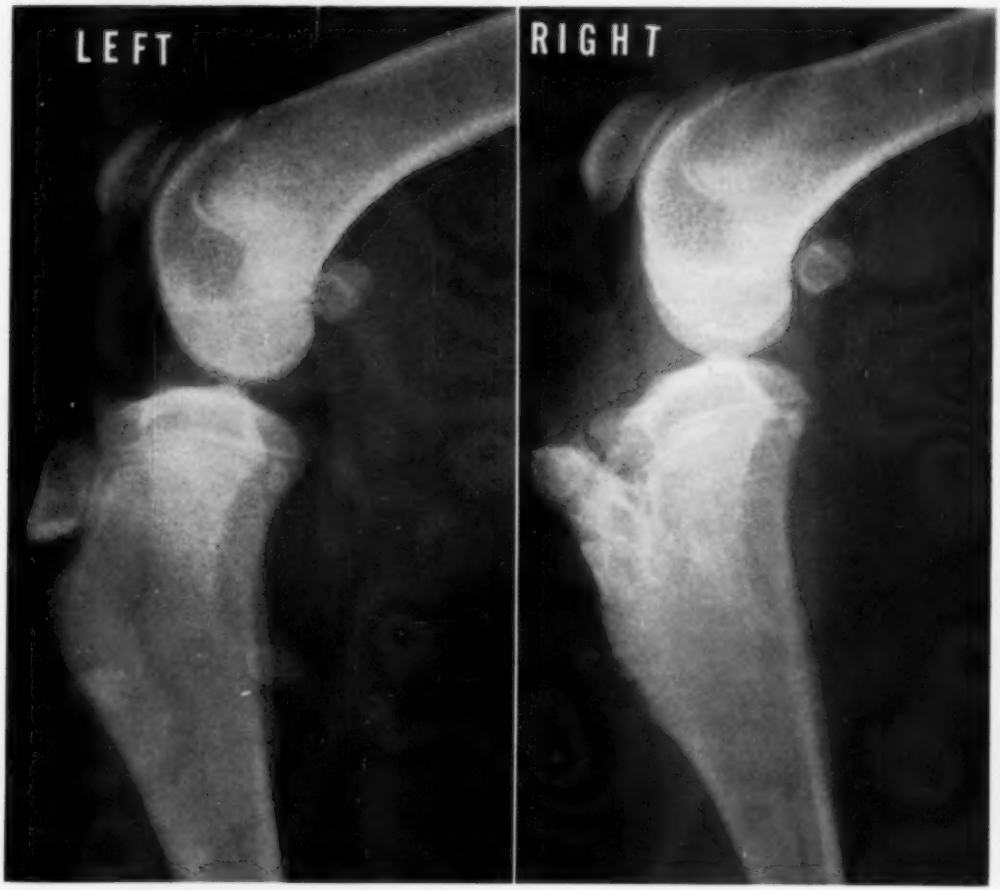


Figure 1

*History.*—A female Boxer, 6 months old, had a supporting lameness in the right hindleg for four weeks. There was painful swelling in the region of the tibial tuberosity and crest. Radiographs of both stifles were taken (fig. 1).

## Here Is the Diagnosis

*(Continued from preceding page)*

*Diagnosis.*—Right hindleg: osteochondrosis, or epiphysitis, of the tibial tuberosity in the late healing stage with exostosis (a) and premature ossification (b). Union has occurred at the epiphysis between the tuberosity and crest. There is also some rarefaction of the tibial crest just distal to the tuberosity (c). Left hindleg: The tibial tuberosity is in normal position and has a normal amount of ossification for a Boxer 6 months old.

Fig. 2—Radiograph of stifle joint (right) showing osteochondrosis in the healing stage: exostosis (a); premature ossification (b); rarefaction (c).

*Comment.*—Osteochondrosis, or epiphysitis, is a disease of young animals which occurs at an epiphyseal site. The condition appears in the transitional period prior to the completion of the epiphyseal union during active bone growth. The tibial tuberosity is one of the most frequent sites of osteochondrosis in the dog. This tuberosity serves as an attachment for the patellar tendon and is subject to injury in a strong young dog.

There are many possible explanations for this condition but trauma seems to be the most probable immediate cause. Other factors, such as vitamin and mineral deficiency, infection, circulatory disturbance (embolic vascular occulsion), have been suggested as being responsible for the changes seen in osteochondrosis. The condition is usually unilateral but may occur bilaterally. An animal is seldom affected in multiple areas; *i.e.*, usually only one epiphysis is involved. The radiograph, during recovery, shows irregular fragmentation and island formation which accounts for the increased density.

This case report was submitted by Dr. Paul V. Belkin, practitioner, St. Louis, Mo.

Our readers are invited to submit histories, radiographs, and diagnoses of interesting cases which are suitable for publication.

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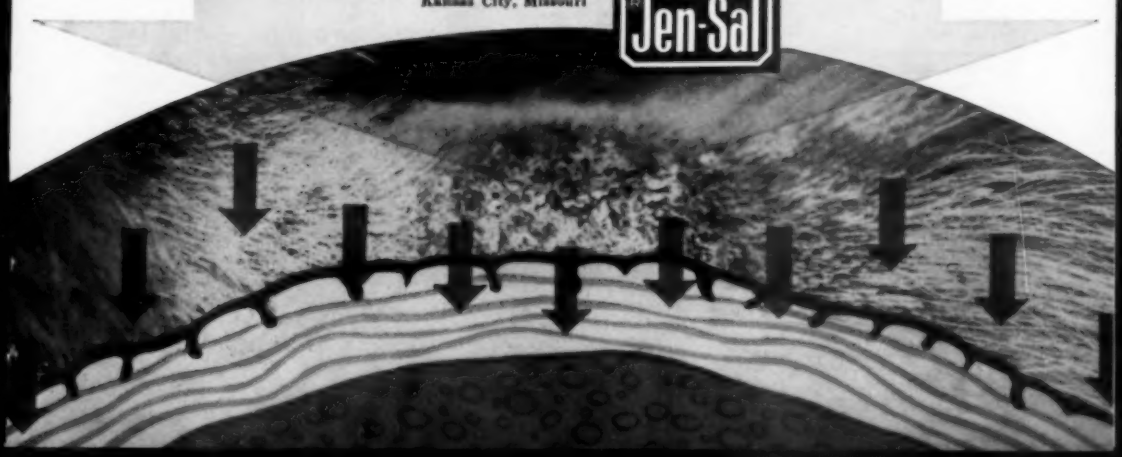

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Northwestern Ohio Veterinary Medical Association, the last Wednesday of March and July. C. S. Alvanos, Toledo, Ohio, secretary-treasurer.

Stark County Veterinary Medical Association, the second Tuesday of every month, at McBrides Emerald Lounge, Canton, Ohio. M. L. Willen, 4423 Tuscarawas St., Canton, Ohio, secretary.

Summit County Veterinary Medical Association, the last Tuesday of every month (except June, July, and August), at the Mayflower Hotel, Akron, Ohio. M. L. Scott, Akron, Ohio, secretary-treasurer.

Tri-County Veterinary Medical Association, the fourth Wednesday of January, May, and September. Mrs. R. Slusher, Mason, Ohio, secretary-treasurer.

OKLAHOMA—Oklahoma County Veterinary Medical Association, the second Wednesday of every month, 7:30 p.m., Patrick's Foods Cafe, 1016 N.W. 23rd St., Oklahoma City. Forest H. Stockton, 2716 S.W. 29th St., Oklahoma City, Okla., secretary.

Tulsa Veterinary Medical Association, the third Thursday of each month in Directors' Parlor of the Brookside State Bank, Tulsa, Okla. Don L. Hohmann, 538 S. Madison St., Tulsa, Okla., secretary.

OREGON—Portland Veterinary Medical Association, the second Tuesday of each month, at 7:30 p.m., Ireland's Restaurant, Lloyds', 718 N.E. 12th Ave., Portland. Donald L. Moyer, 8415 S.E. McLoughlin Blvd., Portland 2, Ore., secretary.

Willamette Veterinarian Medical Association, the third Tuesday of each month, except July and August, at the Marion Hotel, Salem. Marvin M. Corff, McMinnville, Ore., secretary.

PENNSYLVANIA—Keystone Veterinary Medical Association, the fourth Wednesday of each month at the University of Pennsylvania, School of Veterinary Medicine. Raymond C. Snyder, N. E. Corner 47th St. and Hazel Ave., Philadelphia 43, Pa., secretary.

Lehigh Valley Veterinary Medical Association, the first Thursday of each month. Stewart Rockwell, 10th and Chestnut Sts., Emmaus, Pa., secretary.

Pennsylvania Northern Tier Veterinary Medical Association, the third Wednesday of each odd numbered month. R. L. Michel, Troy, Pa., secretary.

SOUTH CAROLINA—Piedmont Veterinary Medical Association, the third Wednesday of each month at the Fairforest Hotel, Union, S. Car. Worth Lanier, York, S. Car., secretary.

TEXAS—Coastal Bend Veterinary Association, the second Wednesday of each month. J. Marvin Prewitt, 4141 Lexington Blvd., Corpus Christi, Texas, secretary.

VIRGINIA—Central Virginia Veterinarians' Association, the third Thursday of each month at the William Byrd Hotel in Richmond at 8:00 p.m. M. R. Levy, 312 W. Cary Ct., Richmond 20, Va., secretary.

Northern Virginia Veterinary Conference, the second Tuesday of each month. Francis E. Mullen, 1130 S. Main St., Harrisonburg, Va., secretary-treasurer.

Northern Virginia Veterinary Society, the Second Wednesday of every third month. Meeting place announced by letter. H. C. Newman, Box 145, Merrifield, secretary.

Southwest Virginia Veterinary Medical Association, the first Thursday of each month. I. D. Wilson, Blackburg, secretary.

WASHINGTON—Seattle Veterinary Medical Association, the third Monday of each month, Magnolia American Legion Hall, 2870 32nd W., Seattle, Wash. William S. Green, 9637 S. E. 36th, Mercer Island, Wash., secretary.

South Puget Sound Veterinary Association, the second Thursday of each month except July and August. O. I. Bailey, P. O. Box 906, Olympia, Wash., secretary.

WEST VIRGINIA—Kyowva (Ky., Ohio, W. Va.) Veterinary Medical Association, the second Thursday of each month in the Hotel Prichard, Huntington, W. Va., at 8:30 p.m. Harry J. Fallon, 200 5th St., W. Huntington, W. Va., secretary.

WISCONSIN—Central Wisconsin Veterinary Medical Association, the second Tuesday of each quarter (March, June, Sept., Dec.). R. J. O'Hern, P.O. Box 617, Cumberland, Wis., secretary.

Dane County Veterinary Medical Association, the second Thursday of each month. Dr. E. P. Pope, 409 Farley Ave., Madison, Wis., secretary.

Milwaukee Veterinary Medical Association, the third Tuesday of each month, at the Half-Way House, Blue Mound Rd. Dr. R. H. Steinkraus, 7701 N. 59th St., Milwaukee, Wis., secretary.

Northeastern Wisconsin Veterinary Medical Association, the third Wednesday in April. William Madson, 218 E. Washington St., Appleton, Wis., secretary.

Rock Valley Veterinary Medical Association, the first Wednesday of each month. W. E. Lyle, P. O. Box 107, Deerfield, Wis., secretary.

Southeastern Veterinary Medical Association, the third Thursday of each month. John R. Curtis, 419 Cook St., Portage, Wis., secretary.

Wisconsin Valley Veterinary Medical Association, the second Tuesday of every other month. E. S. Scobell, Rt. 2, Wausau, Wis., secretary.

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*Jones, S. V.; Belloff, G. B., and Roberts, H. D. B.: Vet. Med. 51:413 (Sept.) 1956.

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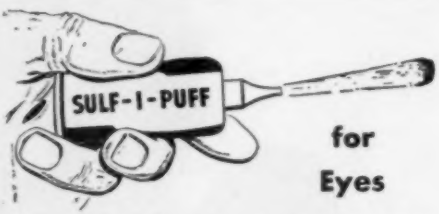


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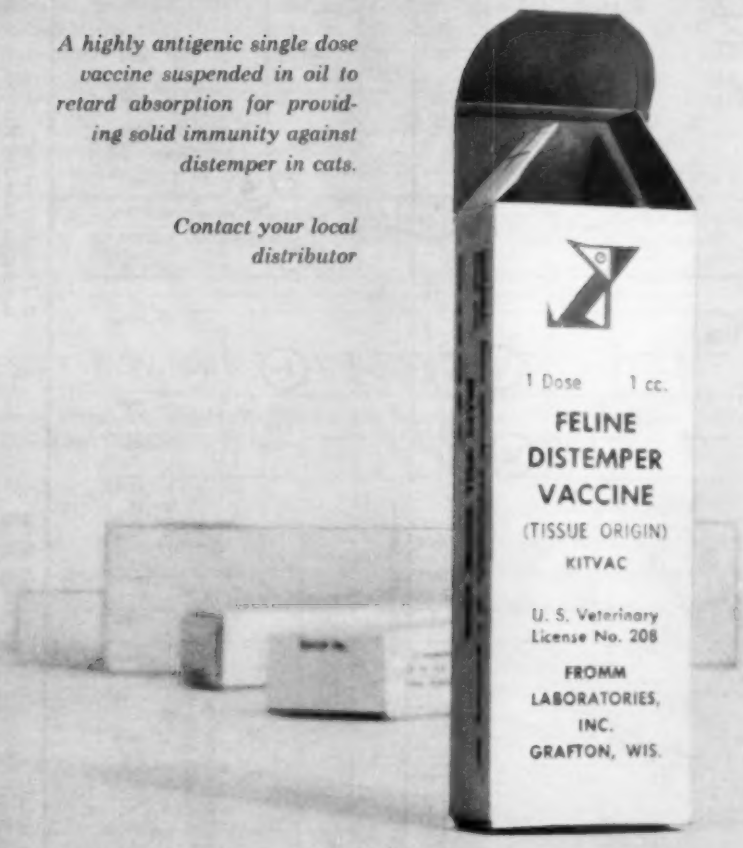


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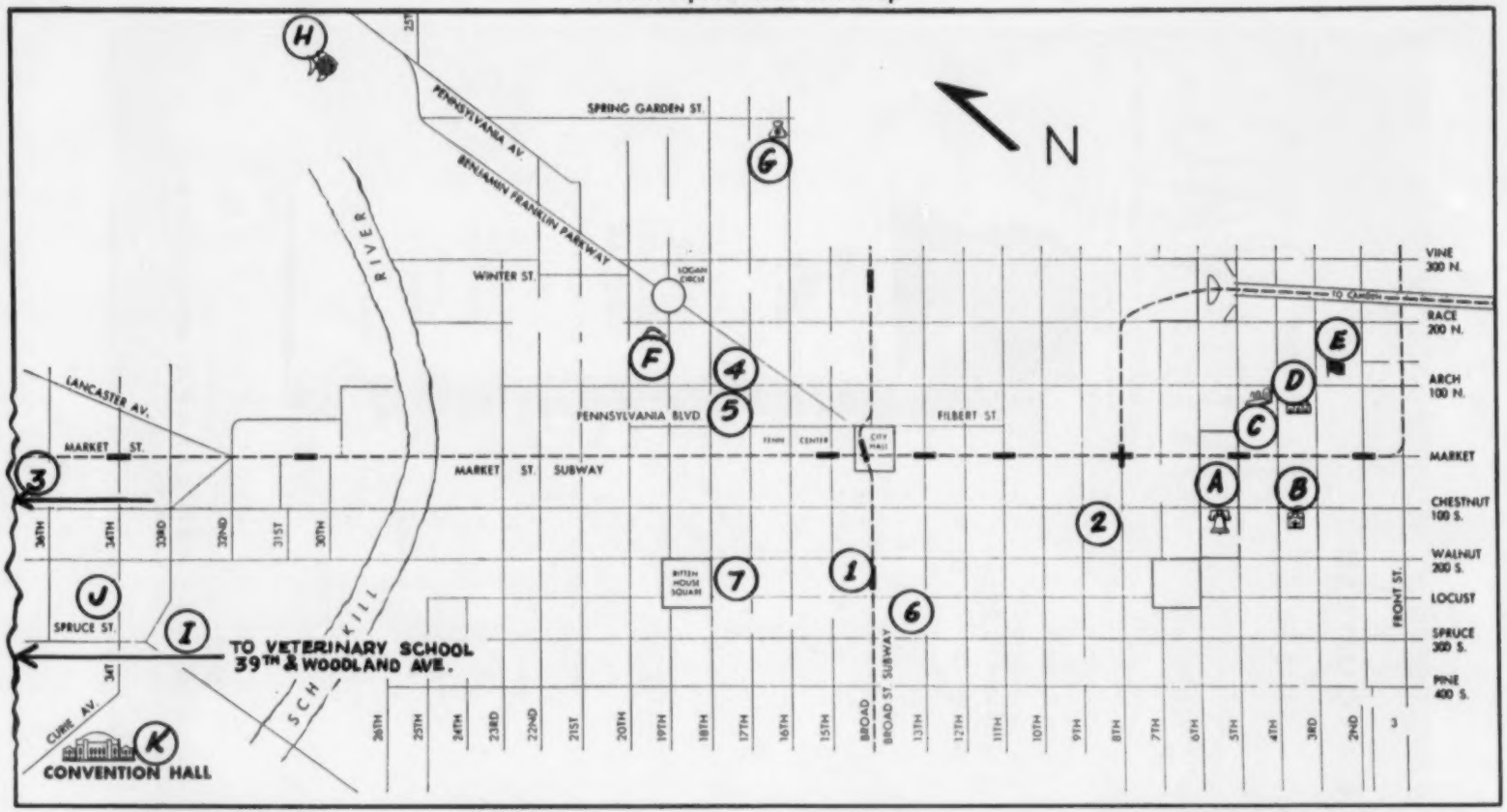


1. Bellevue-Stratford Hotel
2. Benjamin Franklin Hotel
3. Penn-Sherwood
4. Robert Morris (not pictured)
5. Sheraton Hotel
6. Sylvania Hotel
7. Warwick Hotel

A. Independence Hall
B. Carpenters' Hall
C. Franklin's Grave
D. Friends' Meeting House
E. Betsy Ross House
F. Academy of Natural Sciences
G. U.S. Mint (Guided Tours)
H. Aquarium
I. University Museum
J. University of Pennsylvania
K. Convention Hall

# HOTEL RESERVATIONS — PHILADELPHIA CONVENTION

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| 3. Penn Sherwood † | 6.00- 7.50 | 11.00 | 13.50-14.00 | 15.50* |
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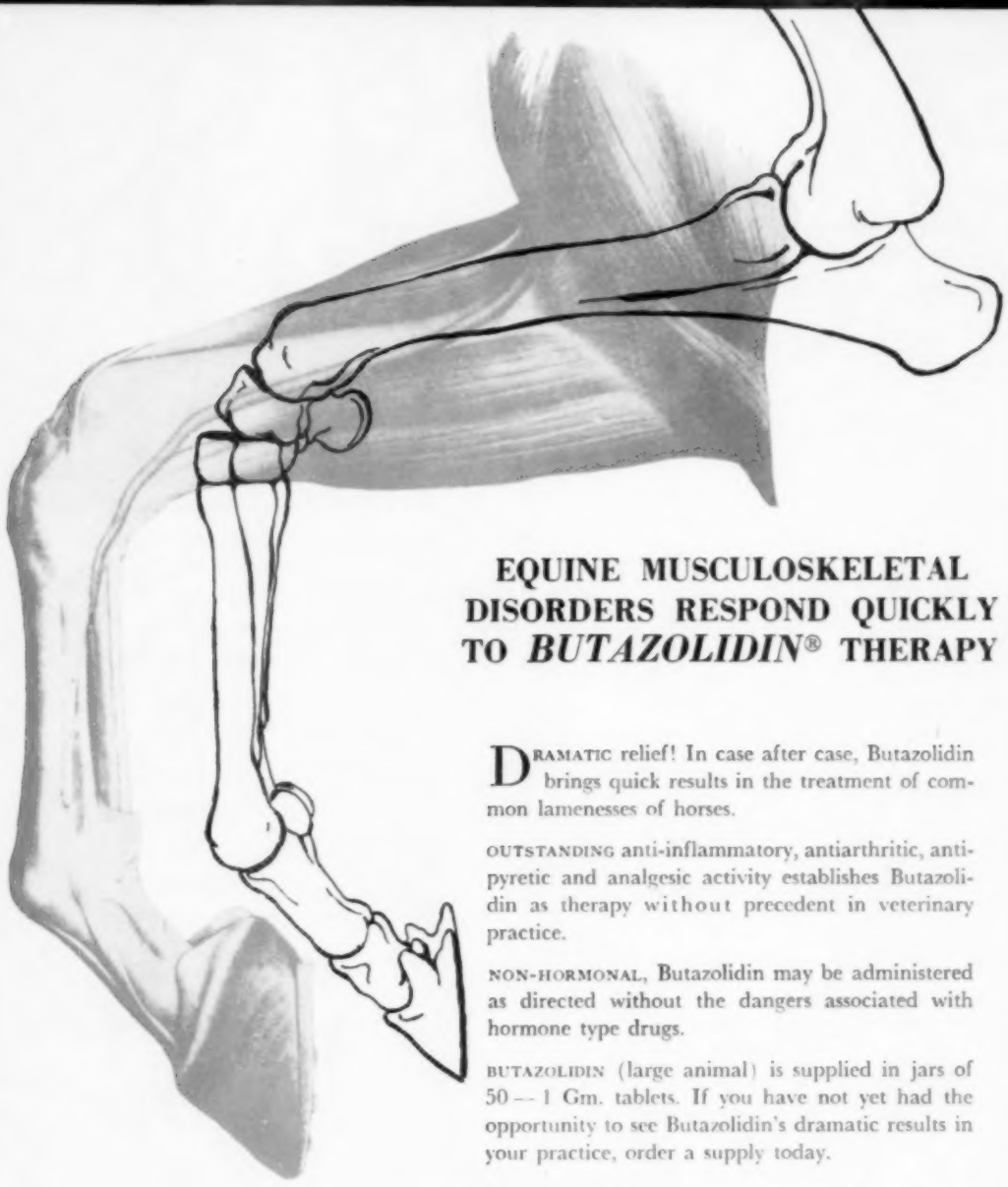

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